THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

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For the Farmers' Cabinet.

House-feeding Sheep.

Mr. Editor,—Your account of the stall-feeding establishment for sheep, at Swainston,* in the Isle of Wight, is interesting, very. I love to see gentlemen amuse themselves in this way, and Sir Richard Simeon is a man who knows how such things ought to be done.

It is now about twenty-five years ago that I visited him at his princely estate of St. Johns, near Ryle, for the purpose of examining his piggery, well deserving its name of "Hog Palace," which covered a very large space of ground, divided into apartments for every purpose, and where I saw several hundred hogs, young and old, all of the white breed, which were kept as clean as the horses in his stables, feeding on the fat of the land; for the milk of a dairy of more than fifty Short-horned cows, valued at many hundred dollars per head, after yielding cream for butter, was devoted to their use, being poured into large cisterns sunk in the ground, to which barley meal was added; this being stirred with a large spatula, soon began to ferment, when it was fed to the hogs; while other cisterns were preparing for their use in the same way. And this, being fed to the whole herd from their youth up, no wonder that many of them could not rise without help, nor see out of their eyes for fat. Here, any man wanting to purchase a fat hog, went and selected one for himself, which was killed and dressed the next day, by the slaughterman of the establishment, ready for delivery; with the fat, liver, &c., belonging to it, "all in apple-pie order," as the neighbours used to term it. I remember, the price, at the time I speak of, was 8*d.* or 16 cents per lb., but it was conceded by all, that every pound so fatted, had cost a third more than it sold for. Sir Richard was particularly choice of this breed of hogs; I was informed, that he had just sent a sow by horse and cart, a distance of one hundred and twenty miles, to obtain a cross with a premium boar, in possession of another *Lossing*, at that distance from his establishment. But all would not do, *there*, any more than *here*, for the breed run out, and dwindled down into a race of *pigmies*, and then the establishment *went* out.

Sir Richard was also famous for raising green crops for his stock of cattle and horses, going in for a very large growth of roots. At the time of my visit, I saw, packed with

* See current volume of Cabinet, p. 94.

straw in the farm-yard, a large heap of mangel wurzel, the produce of sixty acres; with thousands of bushels of potatoes in cellars, whence they were taken to be roasted in a large oven, expensively erected, with iron doors, and newly invented apparatus for economising fuel, &c.; and then they were fed to the cows, and, as I understood, to the horses also. After this, I heard that Sir Richard went largely into the carrot and parsnip culture, and succeeded to admiration, although it must be admitted, the nature of his land was cold, wet and poor, resting on a hungry clay gravel; "but such a man can make a gold mine anywhere," as the saying was: but with him too, as with every man since the days of king Solomon, when gold was the precious metal, and still continues so to be, it takes a guinea in gold, to make twenty shillings in silver.

Sir Richard Simeon is a nobleman, in the best acceptation of the term. Noble by birth, parentage and education, he is the friend of the poor, and the companion of the rich and great. He inherits the beautiful seat of St. Johns, from his uncle, Sir R. Simeon, Bart., and the inimitably elegant mansion of Swainstone, in right of his lady, the eldest niece of Sir John Barrington, Bart. There may be those amongst your readers who can remember the character of the pleasure grounds of Swainstone, in the time of Sir John; if so, I pray them to attempt a description, as they were known by the appellation, the *Willow Woods*, and I will thank them. Often as I have visited them, I confess I should feel at a loss how to begin; the account of the *Leesowes* might afford them a text to preach from.

I am truly glad to find that Sir Richard Simeon still lives, and retains his love of the country and its pursuits—may he live a hundred years; but his sheep stall-fatting establishment, like his Hog Palace, are more to be admired than coveted, by men who have a living to obtain, instead of a fortune to inherit.

P. W.

A Discourse upon Agriculture.

At a Meeting of the Citizens of Oxford and vicinity, Chester County, Pa., assembled for the purpose of forming an Agricultural Society, September 4, 1847.

By William Darlington, M. D.

And he gave it for his opinion, "that whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together." — *Gulliver's Travels.*

Gentlemen,—Having, on some previous occasions, uttered all that I really had to say, in reference to the noble pursuit in which you are engaged,—I had arrived at the very natural conclusion, that I was finally done with the subject: but a call for a renewed evidence of my good will to the cause, proceeding from a district of my native county in which agricultural skill and enterprise are so conspicuous, was found to be irrisistible—notwithstanding my conscious inability to respond, in appropriate terms, to the flattering invitation. Were it as practicable to renovate an exhausted intellect, as it is to restore verdure and fertility to a worn-out soil, the demonstrations of successful culture in this vicinity, might almost warrant a hope of reproducing before you—with something of original freshness—the results of past observations and reflection: for, in truth, I can but serve up, anew, thoughts and opinions which have been long entertained and repeatedly expressed. It is vain, however, to apply the theory of terrestrial culture to cases of intellectual exhaustion; and therefore I must rely entirely upon your good nature, to tolerate the repetition of views which have been heretofore presented to my agricultural fellow citizens.

In complying with the request to prepare a discourse for this occasion, there was an additional motive to the effort, in the recollection that a goodly portion of the improvement, everywhere so visible in this region, owes its introduction to the discernment, skill, and persevering energy of a departed friend, whose memory is deservedly dear to all who knew him,—and will be especially cherished in the district where his example was so beneficial to all around him. I have long felt that some tribute, or testimonial, was due to the memory and services of one who did so much for the advancement both of agriculture and manufactures; and the present seemed a fitting opportunity for an attempt to discharge that duty. To the older residents of the vicinage, it will be unnecessary to say, that my allusion is to the late Col. David Dickey,—a man whose uprightness, sagacity, and active public spirit, rendered him an ornament and a benefactor to the community in which he lived. It was my happiness to know him well: and the last public employment in which either of us was engaged, made it my agreeable duty to serve as his colleague, in a joint commission from the several counties traversed by the *State Road*,—which, passing

in our midst, extends from New Jersey to the Maryland line.* That service, I have the satisfaction to believe, was performed in a manner generally acceptable to those concerned: and it is but justice to the memory of my lamented colleague, to say, that much of the value of that performance was owing to the same zeal, activity, and sound judgment, which he had previously displayed in his agricultural improvements. His was, emphatically, one of those enterprising spirits which are sent among us from time to time—and as it were providentially—to demonstrate, and to teach thoughtless, sluggish mortals, how much an *individual* may accomplish, in promoting the welfare of our race. But if *individuals*, by their isolated efforts and example, can exert such a salutary influence upon the community—what may we not hope from the joint labours of *associated* intelligence? It will scarcely be questioned, I think, that we were designed for social beings. Man is, by nature, a gregarious animal,—and evidently intended for the performance of mutual good offices. Even in his rudest condition, he soon learns the importance of co-operation with his fellows in producing desired results: and as he advances in civilization and refinement, he discovers that the benefits to be derived from combined skill and energy are in a direct ratio with his progress in improvement. The developments of science not only excite a salutary emulation among individuals,—but they also show how much more may be accomplished by a concentration of effort—by a skilful union and concert, of individual talent and energy. Hence the resort to *Societies*, for the promotion of desirable objects. By a judicious combination of their several means, and capacities, in the mode best suited to render them all available, men have accomplished purposes which, *individually*, they could never hope to perform.

Associated efforts having been found thus valuable, in all great works of Art, requiring skill and force—and in the prosecution of researches after scientific truth,—the inquiry is naturally suggested, why the important business of *agriculture*, may not, also, be benefitted by a resort to similar expedients. Is there no sort of knowledge involved in successful agriculture, which may be reciprocated, with good effect, among the members of a Society—or promoted by a generous co-operation? Is there no scientific or practical skill requisite, in the amelioration of soils—the culture of plants—or the management of stock—which may be advantageously imparted by the experienced, for the benefit of young beginners? If there are truths in nature, which farmers are interested to know—or processes in Art, wherein dexterity and economy are desirable,—can any good reason be assigned why the cultivators of the soil should not associate, to secure to themselves those advantages? It may, perhaps, be alleged,—for the unreflecting do often make such random allegations,—that agriculture is essentially a *practical* Profession; and therefore has little occasion for artistical skill, or scientific accomplishments. I am prepared to admit all that can be fairly urged in behalf of sound experience and plain practical common sense—not only in agriculture, but—in all human pursuits. I grant that the cultivation of the soil is eminently a matter-of-fact business. It is true, moreover, that the veriest clodpoll in the land may pursue the beaten track of his annual labours with tolerable success,—and may gather in his crops with little more knowledge of the objects around him, than is possessed by the cattle he drives: but I can never believe that *true knowledge* is injurious to the operatives, or to the interests of any profession or business;—nor can I be persuaded that boorish ignorance is the proper condition and character of a thorough bred agriculturist. Most assuredly, it is not the appropriate character of an American farmer. While I not only agree, but would insist, that a sound *practical* knowledge of their profession should be the primary object of the cultivators of the soil,—I must, at the same time, contend for the feasibility and necessity—in the existing state of society, and under institutions like ours—of an adequate acquaintance with the laws of nature, and with the properties and true character of the objects immediately concerned in agriculture. That acquaintance, of course, should be based on correct scientific principles,—so as to be always available when applied to the useful purposes of life. I hold it, indeed, to be essential to the safety and duration of this Republic, that our *yeomanry* should keep pace with the march of general intelligence. As they value their just rights, and would cherish the attributes of freemen, they must take care that their attainments never lag behind the age in which they live,—nor they, themselves, become unfit to mingle, and to struggle, with the master spirits who, for good or for evil, are ever seeking to direct the course and control the progress of communities. *Agriculturists* being a

* This road begins at the Bridge over the Delaware, at New Hope, and crossing the counties of Bucks and Montgomery, passes along the whole length of Chester county, through the Boroughs of West Chester and Oxford, and part of Lancaster county, to the Maryland line.—Ed. Cab.

majority of this nation, it is perfectly obvious that they must be either the intelligent regulators of its glorious career,—or the blind instruments of its destiny in the hands of artful demagogues;—and consequently they will be held responsible for the fate of the Republic, by their remotest posterity. Ought they not, then, to employ every means, and exert every nerve, to qualify themselves for the high duties thus devolved upon them?

There is nothing unreasonable, nor extraordinary, in the acquirements thus indicated as appropriate and indispensable to the *American farmer*. In a nation fitted for freedom—or which hopes to continue free—such attainments are enjoined upon all classes and descriptions of the people.* Where men stand unfettered on the platform of equal rights, it is justly expected of every one, that he shall qualify himself to meet all the responsibilities belonging to his station in society: and this is eminently true of the particular business to which he is devoted. The remark is as correct as it is pointed and forcible, that "where knowledge is a duty, ignorance is a crime." No man should be held excusable for neglecting the opportunity to inform himself of that which it is his interest and his duty to know. *Professional men*, so termed, are bound to be familiar with the entire history, and with every department of their several callings. The *Jurist* must make himself acquainted with the intellectual processes whence our present *rule of action* has been deduced,—in order that he may correctly apply that rule to all cases of difficulty between man and man. The *Physician* is required to know the structure of the human body, and to understand the laws of the animal economy,—so that he may avail himself of that knowledge, when called upon to relieve the various "ills that flesh is heir to." And the *Divine*, also—whose sacred office it is to minister to our spiritual wants,—to expound the objects of our probationary existence here, and "vindicate the ways of God to man,"—even he is expected to furnish "a reason for the faith that is in him." *Artists* and operatists of every description, who would adorn their several pursuits, find it necessary to understand the *theory*, or principles, involved in their manipulations,—as well as to become expert in the practical details. Such being the unquestionable fact, in reference to all other vocations,—it may well be demanded, why the business of *agriculture*—itself a comprehensive system of natural science, involving more or less an acquaintance with all physical laws, and all terrestrial phenomena—and being moreover the great substratum and support of every other human pursuit—*why should agriculture, alone*, of all earthly employments, be regarded as calling for no scientific attainments—no intelligent observation of the varied natural objects, the interesting facts, and curious processes around us: in other words—no rational exercise of the intellectual faculties with which a beneficent Creator has endowed us? It was, indeed, wisely provided, that an art to which the whole human family is indebted for sustenance, should be so simple in its essential features, that even stupidity can make a living, and mere muscular energy be profitably employed in its prosecution: but, in the nature of things, it cannot be, that a business involving so much of Natural History—and controlled by so many of the laws indelibly impressed upon matter,—it can never be predicated of such a pursuit, that a knowledge of its true principles is superfluous—nor that its best interests may not be promoted by a cultivated intellect. I shall therefore assume, as an established position, that a knowledge of the profession, *in all its relations*, is requisite to ensure the perfection of agriculture, and to elevate it to its proper rank; and moreover, that in a country where laws rule, and the yeomanry have a potential voice in their enactment, it is indispensable to the perpetuity of their institutions, that an agricultural people should be an educated and an intelligent people.

I shall not venture, on this occasion, to trespass upon your patience, by dwelling on the practical details of the farmer. I shall make no idle attempt to entertain *you*, by descanting on the culture of fields, or the management of stock. Instead of essaying, *here*, to teach those first lessons in the art of giving fertility to the soil, it would become me rather to seek instruction from those who have so happily demonstrated how it can be done. I have not now to learn, that *this* is precisely the district of our county, where a renovating agriculture has achieved its greatest triumphs. I shall, therefore, avoid the well-understood topics of lime and manures, and the rotation of crops: and will solicit your indulgence for a few moments, while I advert to the expediency of promoting some of the more intellectual qualifications of the farmer,—those interesting attainments which give an appropriate finish to the agricultural character,

* We have the authority of that excellent man and accomplished friend of human rights, Sir William Jones, for the opinion, that "The principles of government are so obvious and intelligible, that a clown may be brought to understand them."

and impart an additional dignity and grace to the profession.

This, indeed, has been a favourite theme with me, on occasions like the present: for wherever *practical* excellence was known to be established, my attention was naturally directed to those ulterior accomplishments—hitherto so little regarded—and yet, in my judgment, so worthy to be superadded. When the intelligent young farmer has become expert in all the *manual* operations of his profession, and understands the whole *practical routine* of agriculture,—what can more appropriately claim his attention, than the intimate nature,—the structure or composition, the properties and relations—of the various objects involved in his pursuit? Why should he not make himself acquainted—*scientifically* acquainted—with the character of the several *earths* which compose the soil he cultivates? Knowledge of that description—and sufficient for all useful purposes—is readily acquired by the mind that craves rational intelligence; and when once obtained, may often be turned to good account by its possessor. It may not only enable him to become a more successful cultivator, but it will also greatly enhance his interest in his employments, rendering him a wiser and a happier man. The occupation of the farmer, as already remarked, is emphatically with the objects of *Natural History;* and the contemplation of those objects, by an observing and disciplined mind, is a continual source of instruction and gratification. His studies, indeed, are mainly *ultilitarian* in their character: but if rightly directed, are calculated to expand and elevate his views of the Creator's works: for they embrace, to some extent, the three grand divisions of the material world—the Mineral, the Vegetable, and the Animal kingdoms. The first business of the skilful agriculturist, is with the inorganic matter of the *Mineral* kingdom,—so far, at least, as may be requisite to understand the quality of the *soil*, and the best mode of improving and managing it; so that it shall sustain the greatest amount of organic life. His next care will be extended to the primary *organized* beings, viz: the *Vegetable* creation; so regulating the production as to secure the largest contribution towards the sustenance of the most valuable animals. This is *agriculture*, in a technical and restricted sense—i. e. *the culture of the fields*,—and implies, of course, an acquaintance with the *plants* cultivated, or a portion of what is denominated *botanical* science. But the end and aim of the farmer's operations, in the promotion of vegetable growth, is to support the higher organization of the *animal* kingdom,—and by the multiplication of his flocks and herds, to enhance the comforts and favour the increase of the human family. Hence the science of *Zoology* is involved, and the wonderful laws of the animal economy present a claim to be studied and understood. Thus it is manifest that the farmer is directly interested in possessing *some* knowledge of the three great kingdoms in Nature; and it will scarcely be doubted that his knowledge, of whatever extent, will be valuable in proportion to its *scientific accuracy.*

I would, therefore exhort our young farmers to acquire so much Natural Science as will enable them certainly to know, and to discriminate between the more important objects of their daily care and attention,—and by means of which they may also treat of those objects intelligently and correctly, in their intercourse with others. They should be so far acquainted with *Geology* and *Minerals*, and understand so much of *Chemistry* and its laws, as to have a general idea of the structure and stratification of the earth's crust, and a just conception of the reciprocal influences exerted by the constituent portions of the soil and the atmosphere. This information may now be readily obtained from elementary works within the reach of every one who has the taste or the inclination to possess it: but, that all might have a fair and equal opportunity to profit by such knowledge, according to their several capacities, it should be made an indispensable branch of the education of youth, and faithfully imparted, by competent teachers, to every child in the Republic. Until such instruction shall be provided, it may be confidently maintained, that no better substitute can be devised than is afforded by the intercourse of intelligent public spirited men, in well conducted *Associations.*

Similar remarks may be applied to the expediency of a reasonable acquaintance with the *Vegetable* and the *Animal* kingdoms. What sort of an agriculturist is he—in this age and country—who is so ignorant of the interesting *plants* on his own farm, as to be continually overlooking the most pernicious weeds, when they invade his premises; or mistaking, for them, those of a comparatively harmless character; and who knows so little, even of those he annually cultivates, as to be unable to designate them by a name that is certainty comprehended beyond the limits of his native parish? Is the young American farmer, who can rest contented with such imperfect intelligence in his immediate profession,—is *he* calculated,—in this progressive era—to advance the interests, or maintain the appropriate rank, of

that first and noblest, and most indispensable of secular employments? Surely it ought not to be thus with *agriculture*—when all the kindred sciences are going ahead with rail-road velocity. The several departments of knowledge are auxiliary to each other. They reciprocate lights, by which their obscurest truths are illustrated. They should, therefore, all proceed with equal step. It is not necessary, neither would it be expedient, for the practical farmer to spend his time in studying the unimportant species of the vegetable creation, nor in tracing the distinctive features of all the various tribes—"from the cedar tree that is in Lebanon, even unto the hyssop that springeth out of the wall." But, as his business is especially with the more interesting kinds—with the *culture of useful plants*, and the *extirpation of pernicious weeds*,—I hold it to be his duty to acquire a knowledge of *these;* and such a knowledge, too, as shall be adequate, both to the proper management of them, and to the delineation, when called for, of their true botanical character. This would be a limited task, and an easy attainment, quite within the reach of every ordinary capacity. Some three or four hundred species, comprise all the more important plants usually observable on our farms—whether in the forest, the fields, or the kitchen-garden; and it must be an obtuse intellect, indeed, which cannot learn to know and distinguish that number of vegetable forms. The juvenile pupils of some of our female seminaries are, every year, demonstrating the facility with which the task may be performed.*

I shall not detain you with observations concerning the importance of *zoological* information: for *that* is a kind of knowledge so intimately connected with our prosperity and comfort, that we cannot well avoid the acquisition of a reasonable share,—at least, with reference to the larger animals which are domesticated, or indispensable on the farm. Our daily habits and associations force the attainment on us all. The rudest bumpkin that ever heedlessly trampled upon flowers, or worked among weeds, without being able to distinguish one from another, is nevertheless compelled to become acquainted, in some degree, with both the valuable and the mischievous animals,—fowls, as well as quadrupeds: indeed, it is wonderful to observe how well, and thoroughly, such untutored persons do often learn the distinguishing traits, the dispositions, and the characteristic peculiarities, of animated nature. Still, there is a *scientific aspect*, of which every department of Natural History is susceptible,—under which it assumes a methodical perspicuity, an illustrative arrangement, which is exceedingly gratifying, as well as instructive, and merits the attention of all inquiring minds. There is, moreover, a *branch* of Zoology, embracing myriads of tiny creatures, and many of them of the most destructive character to the hopes of the farmer, which is yet imperfectly understood, and demands the closest scrutiny of every one concerned in the products of the vegetable kingdom. I refer, of course, to the multitudinous *insect* tribes; some of which are occasionally so injurious as to spread dismay throughout whole nations,—and, at the same time, of habits so obscure as to require the most patient observation, and the utmost sagacity, to ascertain their true history. Even these minute researches, too generally neglected or despised, are demanded by the best interests of agriculture; and to be successful, they must be conducted on scientific principles. A little mental discipline, however—backed by perseverance—will soon enable the curious observer of nature to make valuable contributions to the common stock of information. I would, therefore, have every *American farmer*, who can appreciate the responsibilities of his position, to cultivate his intellect with the same care and assiduity that he does his acres. Let him habituate himself to note the facts, to observe the phenomena, and to investigate the theory of the processes, which are continually taking place around him: and let no one delude himself into the belief, nor seek to excuse his deficiencies by the stale and hackneyed plea, that he has not *time* for such pursuits. Why, those very pursuits are part and parcel—and a very important part, too—of his own appropriate business. It is precisely for such business that his *time* is allotted to him. At this day, and in this land, it will not do, to urge the want, either of time or opportunity, for the due performance of our parts in life. Most people contrive to find time for what they really wish to do; and if driven to the necessity, are apt to *take* it, at any rate, for

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* It may, perhaps, be admissible to mention, here, that I have recently compiled a sort of *Farmer's Flora*,—or a descriptive enumeration of those Plants which are most interesting to the American Agriculturist—and of which it is scarcely reputable to be ignorant. It was prepared in the hope of thereby promoting a kind of knowledge which I have long thought desirable,—and is designed more especially for the use of our enterprising *young farmers*. I would beg leave to add, however, that I have not the slightest personal, or pecuniary interest, in the success of the work;—for I made a *present* of the manuscript to the first Printer I found, who had the courage to risk the publication.

those pursuits which they are resolved upon. But the fact is, we all idle away, or waste in frivolous amusements, more time than would be requisite to fit us for the performance of our several duties. We are very prone to mistake the real nature of our *wants*. It is not so much to the *want of time*, as to the *want of inclination*, and of a proper sense of our responsibilities, that we should attribute our failure to possess the accomplishments which justly pertain to our profession, and station in society. It is *this want*—this neglect of the more elevated attainments, and this lack of a just perception of the beautiful—which has, hitherto, been most striking and conspicuous among the agriculturists of our country. While our farmers have generally attended, faithfully and successfully, to what is familiarly and truly denominated "the main chance," it must be confessed that too many among them have exhibited a lamentable want of tact and skill in planning and improving, or in availing themselves of natural advantages in the arrangement of their rural establishments.

Next in importance to successful culture, and a correct knowledge of the objects and principles involved in the process, is the attainment known as good *taste*, or that refined sense of the beauties of nature, which knows how to appropriate her charms, in the embellishment of farm houses, or cottages; and to invest them with that witchery and grace which should ever be associated with a country residence. No person, who has enjoyed the delights of a tasteful rustic dwelling, embossed among venerable trees, and reposing amid the verdure of flower-spangled lawns, can fail to be shocked at the contrast of a rude vulgar looking tenement, awkwardly stuck in some open weed-grown space, without a shade-tree, or an enclosure, to protect it from the rays of a burning sun, or the annoying approaches of the trampling cattle: and yet the difference may be entirely owing to the exercise of a cultivated taste in the one case, and a total destitution of it in the other. *Fruit trees*, and *shade trees*, should be regarded as indispensable appendages of every human residence. If duly attended to, the former will amply gratify the palate, while the latter will also minister to our enjoyment, directly, by the refreshing shelter afforded to ourselves, and indirectly, by attracting to their branches the lovely serenaders of the feathered race. How delightful in a tree-embowered cottage, to be roused from our slumbers by the gushing melodies, which, in such abodes, ever greet the dawn of a summer morning! By providing a shady retreat for the little warblers, and protecting them from the weapons of reckless sportsmen, we not only secure their punctual attendance, with the grateful tribute of their vocal strains, on each returning spring; but we are rewarded, tenfold, for all such benevolent offices, by the industry with which the welcome visitors labour to rid us of annoying and destructive insects. It should, therefore, be the business and the pleasure of the intelligent farmer, wherever located, thus to improve and adorn his premises. In a region so rich in native attractions, as our own favoured *county of Chester*, it should be the study and ambition of every occupant of her soil, to develop all her agricultural resources, to acquire for himself the knowledge and scientific skill which rightfully belong to his profession, and by the exercise of a refined taste, to make our ancient bailiwick as eminent for the beauty of her country seats, as she has long been for the neatness and fertility of her cultivated fields.

For the Farmers' Cabinet.

Upland Cranberries.

We have so often written upon the subject of Upland Cranberries, as to be almost ashamed of saying anything more; but at the risk of being considered as having but one idea, will give some facts from the culture of our friend, Mr. Gardner, of Mass., of this year. In writing to me lately, he says, "My swamp cranberry vines were much injured by a late frost in June. An early frost in the fall completed the destruction of fruit for this season. My upland plants bore a full crop, having escaped both the spring and fall frosts."

B. G. Boswell.

Philad., Dec. 9th, 1847.

Longevity of Trees.—Trees are naturally very long lived, and grow to a vast size. In Britain, there are still extant and growing, oaks, and probably elms, which were planted before the Conquest, *i. e.*, more than 800 years ago. And there are yew trees much older still. There are some at Fountain Abbey, near Ripon, in Yorkshire, which are believed to be more than 1200 years old; two in the church-yard in Crowhurst in Surrey, 1450 years—one at Fortingall in Perthshire, 2500 to 2600 years; one in Brabourn church-yard in Kent, is said to have attained the age of 3000 years: and another at Hedsor in Bucks county, which is in full vigor, and measures above 27 feet in diameter—appears to be upwards of 3200 years old.

Holkham, the Seat of the Earl of Leicester.

This magnificent place has been hitherto known to the public chiefly for its agriculture, and the princely hospitality of its owners. Men of all countries have been here to learn the arts of rearing the best breeds of cattle, and of turning the soil to the best account; and no one doubts that the examples here given have been the means of stimulating many throughout the world to carry out similar improvements. There is, however, an additional lesson very legibly displayed here, which proprietors would do well to attend to—I mean its foresting. Trees anywhere, in good land even, are triumphs; they are looked upon as such in rich sheltered valleys, on slopes with mountains at their back; but to have them of commanding stature, in defiance of every obstruction, soil, situation, climate—a biting sea air in this instance—is an achievement which ought at least to be noted and commended to all who have lands similarly situated. The late Sir Fowell Buxton took the hint, and not the least of his legacies was a series of thriving plantations stretched along the side of the German ocean at Runton and Trimmingham.

Holkham, "on an open, barren estate, was planned, planted, built, decorated and inhabited in the middle of the eighteenth century. Such is the record over the entrance door into the hall. Ceres and Sylvanus have now their temples here; and it would be difficult indeed to find an estate over which cornfields and woodlands are more judiciously interspersed. The sale of the timber alone realizes about £4,300 yearly.

The chief object of this notice is to draw the attention of land proprietors who have poor lands near the sea, to a grand feature at this seat, caused by the introduction of the Evergreen oak—*Quercus ilex*. It is here, as a timber tree, magnificent beyond example in this country, and in the greatest profusion. Its appearance in the Holkham woods, proves two things: 1st, that the tree is well suited to dry exposed soils within the influence of the sea air, as has been frequently stated in the Chronicle; and 2ndly, that on chalk bottoms it is entitled to a place beside the beech. In the obelisk wood here, a great part of which is on chalk, it is in several instances intermixed with the common English oak, which it surpasses both in height and bulk, growing luxuriantly after the latter has ceased to thrive.

Of the Evergreen oak as an ornamental object, especially in autumn and throughout winter, it is unnecessary to speak. The only hindrance to its more general cultivation is its high price, and the uncertainty of its growing when transplanted. I am happy to say that Mr. Gorrie, the forester here, has the merit of obviating the latter objection, and with it the former will, no doubt, be considerably modified. He transplants the seedlings about mid-summer, a plan which has turned out to be completely successful. Following his recommendation, I had several hundred put into small pots in the latter part of June, and I now find that they are not only all alive, but have made a second growth. Those who are in the practice of raising seedling Ilexes, will have observed that they complete their first growth in June, and that towards the end of the month the buds assume the appearance of maturity, the leaves becoming rigid and glossy, and that the whole plant is apparently prepared for winter. A few weeks elapse, and it is observed that they commence to shoot with renewed vigor, making in some instances about six inches of additional wood. It is during the interval of rest, therefore, that the plants should be removed. It is of course necessary to shade them from sunshine, and to water them copiously for a week or so after being transplanted.

All who visit this seat, and are interested in this tree, had better ask particularly for the Ilexes in the Obelisk wood; for after walking forty miles, a few years since, for the purpose of seeing the best trees, those only on the lawn in front of the house were shown to me. They are certainly fine, spreading, park-like objects; but the others are majestic and forest-like, and almost justify the extravagant language of Pliny, when writing of the species as it grew about Rome. One tree in this district measures 15 feet in circumference at a foot from the ground; another is eight feet four inches in circumference, has 28 feet of a clear hole, and is 70 feet high: a third is nine feet in circumference, has a clean hole of 20 feet, and is 75 feet high: another is 12 feet in circumference and covers a space of 22 yards in diameter.

The usual approach to this seat, on the Fakenham road, is skirted with thriving young trees of the Araucaria and Cedrus deodara, which in a few years more will be large enough to confer a striking and graceful effect. A considerable number of the latter has been raised from the seed by Mr. Gorrie, and it is intended to plant them on an extensive scale, both as ornamental objects and forest trees. The Araucaria grows here without the slightest protection during winter; and it will be interesting to those who are about to plant within the influence

of the sea, to know that they may safely include the Laurustinus as a shrub which will succeed well in such places. Here it is used in some instances as a hedge plant, and in this capacity, it stood throughout the last severe winter without being injured.

The whole sylvan picture at this seat forms a profitable study. The lesson is, this great woodland, its beauty, the shelter it gives to bleak lands, and the splendid revenue derived from it, may be repeated elsewhere through diligence and perseverance. Nature is the same to all without distinction; and if we find her in any instance wearing a richer or more valuable garb than she displays over other lands similarly circumstanced, it is only because her favours have been in that instance sought in a more liberal spirit. Draining, subsoiling, and manuring, are amongst the petitioners whom she always answers.—*Gardener's Chronicle.*

Chess,—Deep Ploughing.

An intelligent farmer of Berkley county in Virginia, makes the following remarks in a letter recently received from him, dated the 4th inst., although our own opinion in the matter is not shaken; yet the fact as stated, in regard to the chess, is curious, and adds one more to that long catalogue, which has perplexed naturalists, without convincing them that nature would do anything, so entirely and thoroughly out of her usual course. Wheat, we believe, never yet, turned to chess, and never will.—Ed.

In order to add some information to what has not yet been conclusively settled by agricultural writers, I would state, that my neighbour, a very intelligent farmer, received a beautiful sample of wheat—about a pint—this fall one year since, and carefully drilled it in the corner of a field, which this last harvest produced 20 bushels to the acre; it was the corner next his house and barnyard. I saw it just before harvest; it had been drilled in four rows, 60 feet long, and every particle but about a dozen heads was cheat;—this experiment has conclusively persuaded me that wheat will turn to cheat; my neighbour accounted for it by its having been eaten off late in the spring by chickens; if this be true, it was a little remarkable, that the wheat not one foot from it of another variety, was a thick, regular, and fine crop of wheat.

Experiments upon deep ploughing for corn, have been carefully performed, and the result has been that in a dry season, the corn will suffer much more than when the ground is left compact. I know this is opposed to the general impression, but I have seen the experiment this past year so clearly and carefully performed, that I begin to doubt my former opinion, that deep ploughing was essential for this crop—the soil was a lime stone slate—the corn planted with a sharp stick, in ground which had not been ploughed for a year; its after cultivation was removing the weeds with a hoe.

From the Horticulturist.

On the Use of Water in Transplanting Trees.

This is a practice which is condemned by many gardening writers; but is their objection founded on careful experiment; or has the subject, like so many others, been prejudged? Experience and reflection have given me a high opinion of the use of water in transplanting trees, and I will give you a brief description of my method, which you may take for what it is worth.

After preparing the border for the tree, I take out sufficient earth to give the roots room to lie in their natural position. This earth is finely pulverized. One man now holds the tree in a perpendicular position, with its roots in the hole, while another pours two pailsfull of water into the hole, and a third slowly sifts the fine soil into the water, being at the same time careful to fill the outsides of the hole so as to keep the water about the tree.

This process leaves the roots exactly in the position which they occupied before removal, and it makes the earth settle about them in the most perfect manner. If the soil is fine, and if it is sifted into the water slowly, it is deposited on every side, and every part of the roots, filling all of the holes and interstices, coming in contact with the smallest fibre, and covering the surface with perfect uniformity, like the deposits of gold in galvanic gilding.

Trees set in this manner, maintain their upright position much better than trees set by the ordinary method. If you take hold of a tree immediately after it is set, in the way I have described, you can pull it over very easily, but after it has stood a few hours, it feels as if it had grown in its new position.

Finally, I am confident, from practice, that the trees are more certain to live and grow vigorously when water is used in this way, while they are being planted. After losing a great number of trees, I adopted this plan of transplanting, and have since set about five hundred, out of which I have lost about a dozen, and I think most of these were dead when they were removed.

George Bartlett.

Smithfield, R. I., Oct. 7th, 1847.

Prince George Agricultural Society.

We make the following extracts from an Address delivered by Thomas F. Bowie, on the 15th of Tenth month last, before the Prince George County Agricultural Society, Md. We find the Address in the Marlborough Gazette.—Ed.

The most important improvements which have taken place in the practice of husbandry, within the last few centuries, may indeed be justly ascribed to the formation of Agricultural Societies. The progress of Christianity and the consequent advance of civilization may, it is true, be claimed as the prolific parents of every melioration which has taken place in the condition of the human race. Their prominent and controlling influences are no less seen in reforming the habits and softening the asperities of crude and unregenerate nature, than in the progress of science, and in the general diffusion and increase of knowledge among men. To these, as the remote causes of every blessing which has been vouchsafed to man, we yield our willing assent. But as the faithful chroniclers of truth we must remember, that Christianity and civilization flourished for more than twelve hundred years, before any visible improvement took place in the pursuit of agriculture. It had existed to be sure, from the earliest period of which we have any account, both with savage and civilized nations, as one of the most useful and important of human occupations, but its practice was unaccompanied by any other knowledge than that derived from mere experience, and was confined for the most part to the simple process of exhaustion, unaided by any acquaintance with those principles of re-invigoration, which later years have so successfully developed. The ancient Chaldeans and Egyptians were skilful in practical husbandry. The Egyptians ascribed the invention of the art to their god Osiris; and such was their veneration for it, that they actually worshipped animals that were employed in tilling the earth. The ancient Chinese were also well versed in the practice of it; and to them has been ascribed the invention of drill husbandry, which is now so successfully practiced both in England and in this country. Mago, the celebrated Carthagenian general, wrote no less than twenty-eight books upon the subject of agriculture, which, Columella informs us, were translated into Latin by an express decree of the Roman Senate. The ancient Romans thought it the most honourable employment of life, and that the highest civic honours belonged to him who cultivated well his own lot of ground. Cato the great, wrote a large treatise on agriculture, and was the first Latin author on the subject. He was followed by Varro and Virgil. Columella, who lived in the reign of the Emperor Claudius, wrote twelve books on the subject. But from his time to the reign of Constantine IV., agriculture seems to have declined, when it was again revived by that Emperor, who made a large collection of the most useful practices and precepts which he caused to be extracted from the best authors, under the name of Geoponics. From the time of Constantine IV., however, down to the sixteenth century, agriculture was much neglected and seems to have sunk into great disrepute. It was not until about the sixteenth century, when agricultural associations began to be established, that the pursuit of agriculture assumed a more elevated rank in England. At this period, men of genius and of science devoted their attention to the subject, and in a short time it received an impulse from their philosophical researches, which soon placed it among the most desirable and interesting pursuits of life.

Among the first in England, who invested the subject of agriculture with a charm, wholly unknown to it before, was Sir Anthony Fitzherbert, an eminent Judge of the Court of Common Pleas. His writings on the subject not only stimulated men in the highest walks of life to the pursuit of it, but they unfolded a fund of knowledge concerning the growth of plants, the nature and properties of soils, and the various kinds of aliment required for the different vegetable productions of the earth, which gave to the pursuit of agriculture, all the elements of a refined taste, and of strict philosophical research. These, together with the writings of Sir Hugh Platt, and of Gabriel Pluttes, at a somewhat later period, the two latter of whom treated more particularly on the subjects of manuring and of draining, worked an entire revolution in the whole system of husbandry, which before that time had been practiced in England. What had once been considered a low and menial pursuit, became now, one of the most prevailing among men of rank and of education; and Peers of the realm, as well as country gentlemen, whose fortunes had been impaired by the political violence of the times, found it necessary to seek refuge from distress, by engaging in agricultural employments. These results necessarily lead to more extended inquiry after that sort of information which could only be derived from the experience of practical men, as well as to more thorough examinations into the nature and properties of the various kinds of stimulating substances, which might be supposed to possess the qualities of fertilization. What could not be

done by individual exertion, was accomplished by associated enterprise. Agricultural societies were soon established, composed of men of eminent learning and of practical experience in the art of husbandry, and by means of the information which they collected and diffused, the spirit of emulation they promoted, and the inducements they held out to discoveries of new and useful improvements in the management and cultivation of the soil, agriculture in a short time advanced from a comparatively low and degraded condition, to one of exalted honour and excellence.

We are indebted to Samuel Hartlib, the friend of Milton and of Cromwell, a distinguished English agriculturist of the sixteenth century, for the establishment of agricultural societies. In a work called the Legacy, which he published about the middle of that century, he strongly recommended the foundation of a National Institution, for the encouragement of husbandry; and also the formation of individual associations for the promotion of agricultural knowledge. It does not appear that the Government followed his recommendation, by establishing at that early period any public institution of the kind, but in accordance with his suggestions, individual associations were formed in several parts of the kingdom; and in a short time their beneficial effects were manifested by the renewed assiduity with which agriculture was pursued, as well by the nobility as by the gentry. From this time down to the year 1660, when the rebellion and civil wars which had for so many years convulsed the nation, terminated; and from that time, to the year 1793, a period of more than a century, the subject of agriculture attracted more attention in England, than it had done in any former years. The writings of Kaimes, of Sinclair and Hunter, of Evelyn and Ray, of Duckett, Dugdale and Young, of Anderson, and many other eminent men during this period, together with the establishment of agricultural societies and other literary institutions, having for their objects the promotion of the useful arts: such as the Royal Society, the Society of Arts, and others of a like nature, had so elevated the art of husbandry, and so thoroughly imbued the great mass of the people with a love of its pursuit, and awakened them to a sense of its usefulness and importance, that the Government, in the year 1793, established for the first time, a Board of Agriculture, similar in many respects to that which Hartlib had recommended more than a hundred years before. To the exertions of this institution, in obtaining and disseminating information on the objects of its formation, by its offer of rewards for important discoveries, its premiums for articles of excellence in all the departments of agricultural industry, and to its efforts generally in promoting and advancing the agricultural interest of the nation, may be ascribed that spirit of enterprise and eminent success, which have since marked the prosecution of agricultural pursuits in England; and which, within the last fifty years, have placed the art of husbandry in the advance of all other human occupations.

The same successful results seem to have followed the establishment of agricultural societies in France, in Germany, and other European States. No less than fifteen societies were formed in one year in France, with the sanction of the Government, for the express purpose of encouraging the pursuit of agriculture; and premiums were offered for the best essays on the subject of practical husbandry, as well as for every variety of useful improvements in the manufacture of labour saving machinery. The Royal family used to attend these societies in person, and at Lyons, Bordeaux, and Amiens, were periodically assembled the most influential and scientific men of France, lending their zealous co-operation in advancing the interest, and promoting the happiness of the cultivators of the soil. Throughout Germany, particularly in the province of Bavaria, at Berne in Switzerland, and at Stockholm in Sweden, similar institutions were established. To the spirit of emulation and general fondness for agricultural pursuits, created by the formation of these societies in Sweden, may be ascribed the botanical and other writing of the great Swedish philosopher Linnæus, to whose indefatigable exertions and philosophical researches we are indebted for the best exposition of the nature and properties of plants, and for the most perfect analysis of the laws of the vegetable kingdom, which has ever been presented to the world.

At no period, however, and in no part of the world have agricultural societies exerted so happy an influence on the agricultural industry of a nation, as they have done, within the last quarter of a century, in the United States. Notwithstanding the high degree of excellence which the practice of husbandry had attained in the old countries of Europe, it seems to have made but little progress among the early settlers on this continent. In old and thickly populated countries, where prerogative privileges are the fruits of hereditary right, and where, from the nature of their political institutions, the masses of the people are excluded from general participation in what are usually termed the professional pursuits, agriculture is more

likely to become the prevailing occupation of life; and as population becomes more dense, the necessity of subdividing lands, to supply the increasing demands of agricultural labour, becomes more and more urgent. Hence, in those countries where the farmer is compelled by the force of circumstances to restrict his operations to the same piece of land, he looks beyond the primary process of production, and seeks out new sources of renovation, which the exhaustion of repeated culture has rendered indispensably necessary. Under such circumstances the practice of husbandry is more apt to flourish; and great and varied improvements are almost sure to take place, as necessity may require their successive development. But in a new and uncultivated country, where population is scarce and land abundant, like that which our Anglo Saxon ancestors found on this continent, where nature had so lavishly bestowed her choicest gifts, abounding in rich and fertile lands, covered with timber of every variety; and requiring only the axe of the husbandman to be brought under successful tillage, the principles of scientific and experimental agriculture, it might be supposed would be not only but seldom resorted to in practice, but might even be considered as utterly valueless. It is not at all surprising then, that our ancestors on this continent should have neglected the study of scientific husbandry. The earth, when cleared, yielded almost spontaneously to their wants; and when exhausted nature became weary of productiveness, new and maiden soils, teeming with vegetable life, were ready to send up their bounteous offerings. This practice of relying on newly cleared lands, to supply the place of those which had been worn out by cultivation, seems to have been the settled course of husbandry in this country, even down to a period long since the revolution. It exists, at the present day, as the established course of culture in many of the western and southern States of the Union. There are many persons, and perhaps some now present, who can recollect when it prevailed almost exclusively in our own State; and indeed, we are not without examples in this and the adjoining counties, of persons within late years, leaving their homesteads and the places of their nativity, simply because they had no more lands to clear; and seeking new homes in the woods and forests of the west, where alone they supposed could be found the true elements of agricultural prosperity. But I am happy in being able to say, this practice no longer prevails. The pursuit of agriculture has attained in this country as elevated a character as it ever enjoyed in any other. The formation of agricultural societies and the establishment of agricultural journals have produced the same results with us that have followed their progress in other parts of the world. The American farmer is not a whit behind the English farmer in the knowledge of those great properties of matter which science has developed, and the hand of industry applied to the cultivation of the soil. If the Englishman can look down upon the "golden valley of Herefordshire," and exclaim in a spirit of patriotic pride, here are the fruits of our industry and here the evidences of our skill in the art of husbandry; so too can we, with the same exultation and delight, point to the rich and renovated fields of New England, for similar evidences of agricultural improvement. Skill has taken the place of ignorance; and by its union with industry, brings forth its increase no longer in dwarfish and starvling proportions, but in all the fulness of gigantic exuberance. Scenes of desolation, and prospects of dire and barren waste have been changed, as if by magic, and in their places are now seen rich fields of abundant verdure, presenting in landscape to the eye, every thing that is beauteous to behold, and to the appetite, every thing that is wanting for the sustenance of life. The hand of science has lifted up the veil which hitherto obscured our knowledge of the laws of vegetation; and unfolded to our view those concrete principles of production and re-production, of which the earth was made capable, when it came from the hands of its Beneficent Creator. Unlike our unenlightened ancestors, we are no longer obliged to roam from field to field, and from woods to woods, in search of new and unexhausted soils, but cleaving to our own beloved homes, and to our own native spots, with all that tenacity which nature has instinctively planted in the human breast, and which it delights to gratify—no matter how worn out by culture, or exhausted of their energies, we can make them to bloom again with all their original fragrance, and to become redolent with more than their original fertility. Such has been the progress of improvement in the art of husbandry, and such the beneficial results of agricultural societies, and of agricultural journals.

With reference to the consumption of breadstuffs in our own country, I believe it to be much greater than is generally thought to be. Take, for example, the article of Indian corn, which is certainly more extensively grown, as well as more extensively consumed, than any other article; and by reference to the returns of the census of 1840, we may approximate to something

like a fair estimate of its probable domestic consumption. The growing crop of Indian corn for that year was estimated at 377,531,873 bushels, or 75,506,375 barrels. We will assume this to be the crop of the last year: although the crop of the last year is not believed to have been so large as those of preceding years. The population of the United States at present is supposed to be, in round numbers, 20,000,000. Of these, 3,000,000 are under the age of ten years: leaving 17,000,000 above that age, who may be put down as consumers of Indian corn to a greater or less extent. In 1840, there were in the United States 26,301,293 of hogs—19,311,374 of sheep—14,971,586 of neat cattle—4,335,669 of horses and mules—$9,344,410 in value of poultry; and estimating these at an average value of thirty cents each, there was in number, 30,000,000 of poultry in the country. There were also, 41,402,627 gallons of spirituous liquor distilled, of which, one-half, say 20,701,313 gallons were made of Indian corn, which required 6,900,437 bushels, or 1,380,089 barrels. Now, this crop of 75,506,375 barrels, only gives to each hog one barrel and a half of corn—to each sheep two gallons—to each of the neat cattle one-half barrel—to each horse one barrel and a half—to each of the poultry two gallons—and to each human being, over ten years old, one barrel; after deducting the number of barrels distilled into spirituous liquor. Besides these, it is believed there are 1,000,000 of dogs of all descriptions, in the United States; and lest I may be considered as having given out too large an allowance to the above named description of consumers, I think, with the aid of a "Philadelphia Lawyer" to assist me in counting the millions of rats, and squirrels, and raccoons, and bears, and goats, and deer, and crows, and blackbirds, and other graniverous and bread eating animals, not enumerated in the census, all of which will get their share in spite of you—together with the consumption, by means of wastage, losses by transportation, and other "accidents by flood and field," we may together, make out consumers enough, likely to take whatever surplus may be left. And yet, notwistanding the claims of these various consumers, which show, at least, the extent to which the domestic consumption of Indian corn might be pushed, we actually exported to Great Britain and Ireland during the year ending the 1st of September, 1847, the amount of 17,298,744 bushels of Indian corn, and 847,280 barrels of corn meal, making together 4,307,628 barrels of Indian corn: besides nearly 20,000,000 bushels of wheat, —including wheat and wheat flour—which latter amount is nearly one-fourth of the entire estimated crop of wheat of the year 1846. Now all these things go to show, not only the vast extent of the domestic consumption of the country, and the point to which it might be made to reach, but at the same time, they furnish ground for serious reflections, whether the exportation of breadstuffs from the country may not be carried to an extent which might produce a scarcity at home—such in fact now seems to be the case in parts of Pennsylvania, and in regard to the article of wheat, there are reasons for believing that the crop will be deficient throughout the country.

Chess.

Bromus Secalinus.

FEW subjects of practical agriculture have a greater interest than this. Substituted for wheat, not a more miserable crop exists. Its appearance in a field of wheat is like the *plague spot* on the human frame. To avoid it the farmer is obliged to see that his seed wheat is pure, and utterly destitute of that seed. It is the remark of many thorough farmers, that they never raise *chess*. This would be adequate proof in any other case of the origin of the plant.

But the remark is often made that the fields in which the wheat is *winter-killed*, abound in chess. The proof is palpable. Numerous such fields have been seen this year. Is this adequate reason for the opinion that *wheat is converted into chess* by the frosts of winter? I think not, for the following reasons.

1. All the wheat fields in which the wheat has been killed by the winter, do not abound in it, and some of them are free from it. It is curious that the chess is not the uniform result of the killing of wheat, if the supposed change is effected by the operation of winter.

2. Wheat and chess are not found growing on the same root. The contrary has been alleged, but an examination of the cases has ever proved that this is not the fact. If wheat is converted into chess, all the plants on the same root are the subjects of the transformation.

3. The distinctness and difference of the two. Wheat has a long head, or *spike*, of sessile flowers, and does not send out branches; chess has a diffusely divided stem or *panicle*, in several places towards the summit, in form like oats, and bearing short, and rather close, short *spikes*, or collections of flowers. The supposed change, therefore, affects the whole form and appearance of the plant. The embryo plant is formed in the seed of wheat, and the change must affect the very form of the embryo, and cause a

great modification of the whole plant. The fruit or seed, too, is changed in its form, manner of growth, and character of the matter which it contains. No similar change occurs in other plants, and there is no proof of the said change in this. In all their characters, wheat and chess are more diverse than rye and wheat, barley and wheat, oats and rye, barley and rye, apple and pear, cherry and plum, and the like. Chess is not like a *hybrid* of other plants. It is not the *pollen* which effects the change in chess, but the form and peculiarities of chess exist before the flowering and the evolution of the pollen take place.

It has been said that *rye* has been changed into *oats*, but there is needed a satisfactory proof of the fact; as there is that the brain of man is at one time that of a fish; at another, of a crow; and at another, of an ape. Such peculiarities must have been maintained to ascertain how far credulity can extend, and how large a part of men can believe themselves to be *improved tadpoles*.

4. There are adequate sources of the seeds of chess. They may have been sowed with the wheat, and developed with greater fertility as the wheat was absent from the well cultivated earth. Such a fact is often noticed in the growth of other plants.

The seeds may have been already in the ground, and buried too deep for germination, till cultivation placed them in a situation to grow. This is a well-known fact in respect to a multitude of plants, whose seeds are long preserved in the ground, and germinate on the proper exposure.

The wheat of new lands, if the seed is usually pure, is remarkably free from chess. The seed is probably always carried with the wheat, and this begins the chess, which is afterwards developed in the circumstances favourable to its growth. One of these is the absence of wheat by being winter-killed. *Let it be shown* that the seed of chess is not in the ground, before the influence of winter is made the cause of its appearance.

5. Chess propagates itself by seeds like other grains. Thus it is like any other plant, as the "herb yielding seed after its kind, and the tree yielding fruit, whose seed is in itself after its kind," a principle fundamental in human belief. If cold and frost may change wheat to chess, why does not heat change chess to wheat? If the farmer intends his wheat shall be free from the seeds of useless, or injurious, or noxious plants, he must remove the seeds from his seed wheat, and weed out the plants from the growing grain.

It is of no avail to say, may not the transformation of wheat to chess take place? It is inconsistent with all the known laws of vegetation, and the violation of fixed laws, by natural causes, is impossibility. What miraculous power might effect is not to the purpose, when the laws of matter, organized or unorganized, are under consideration.

A writer has, indeed, called chess a hybrid; but of what is it a hybrid? Where are the two plants which are thus assimilated? A hybrid is formed by means of two closely related species, the pollen of one being transferred to the flower of the other. If the two plants are closely related, the modification can sometimes be effected. Its infrequency, when the number and proximity of plants* is considered, is proof enough of the difficulty. Besides, if it was an easy process, hybrids would be common over the fields. Wheat and rye are nearly related species; but they are grown together often by the farmer, and yet both preserved distinct—not a hybrid of them appears. But chess has generic characters, which separate it far from those of wheat. Wonderful, indeed, would be the modification of the one into the other. A hybrid of it must be, not chess, but some yet unknown vegetable.

Fields of wheat sometimes abound in *cockle*, Lychnis *githago*, whose seeds are so ruinous to good flour. Why has not this plant been considered some modified wheat? Because it is so different. What is the limit to differences, when wheat and chess may be said to have the same origin?

The correct knowledge of chess leads directly to safe agricultural practice. The remedy is as palpable as the difficulty. Let the soil be freed from the seeds of chess.—*American Journal of Agriculture and Science.*

Mode of Keeping Milk to prevent Souring.

In passing a store a short time since, in rather an obscure part of the city, and seeing a large number of milk cans standing about the premises, I walked in and learned the following particulars from a fine healthy woman, of middle age, who, with her daughter, a buxom girl of about sixteen, was standing behind the counter waiting upon customers. They sell the milk of three hundred cows, principally consigned to them from Orange county by different farmers, which brings three cents a quart at wholesale, and four cents retail. Each can is marked with

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* A dozen or more plants of different kinds, and several of them in flower at the same time, may be found on a square foot of grass lands.

the initials of the farmer from whom the milk is received, in order to avoid confusion when they are exchanged for return.

In answer to some inquiries about sour milk, I was informed that there is a great difference in that brought by different individuals. Some of that which is brought the greatest distance keeps the longest; and in one instance they had never lost a single can. On asking the reason of this, I was told that the milkers must have filled the cans of cold milk with warm milk directly from the cows, which causes it to sour. "This," said the woman, "is always the effect of mixing the two." Another cause of souring, she said, "is in consequence of not immediately depriving the milk of its animal heat. Some farmers set the cans of milk in cold water, and there leave them. The water soon becomes warm, and is but little better than if they were not put in at all. Others draw off the water as soon as it becomes warm, and replace it with cold, until the milk is sufficiently cooled; while others place their cans in a cold spring or vat of running water, where it soon becomes perfectly cold. But the best way," said she, "for I was brought up on a dairy farm, is to put the milk in large pans placed in running water, which will cause it to cool immediately; and then pour it into the cans, leaving off the lids or covers for all the gases to escape, until they are ready to convey to market."

By this time the husband came in, and I turned my attention to him, as his wife and daughter were busily engaged in waiting upon their customers. On asking him whether some lots of milk from the same cows do not make more butter at one time than another, he replied that he had churned through the hot weather with his own hands; that he had measured the milk and weighed the butter produced from it; and that he had found it would require from eleven to twenty quarts of milk, brought from the same farm, to make a pound of butter, but could give no satisfactory reason why it was so.—*American Agriculturist.*

Hereditary Propensities in Dogs.—Roulin relates that the dogs employed for hunting deer in some parts of Mexico, seize the animal by the belly, and overturn it by a sudden effort, taking advantage of the moment when the body of the deer rests only upon the fore legs; the weight of the animal thus thrown over being often six times that of its antagonist. The dog of pure breed inherits this disposition, and never attacks the deer from before while running: even should the deer, not perceiving him, come directly upon him, the dogs slip aside and makes his assault on the flank; whereas other hunting dogs, though of superior strength and general sagacity, which are brought from Europe, are destitute of this instinct. A new instinct has also become hereditary in a mongrel race of dogs employed by the inhabitants of the banks of the Magdalena, in hunting the white lipped Pecari. The address of these dogs consists in restraining their ardor; attaching themselves to no animals in particular, but keeping the whole herd in check. Now, among those dogs, some are found, which, the very first time they are taken to the woods, are acquainted with this mode of attack; whereas a dog of another breed starts forward at once, is surrounded by the Pecari, and, whatever may be his strength, is destroyed in a moment.—*Millengen's Mind and Matter.*

For the Farmers' Cabinet.

Hymn for the Country.

Come to the fields,—our God is there;
Above, around, his glory view;
With bended knee and heart of prayer,
Mark yon waving green—sky of blue.

Come to the fields,—far up on high,
His throned magnificence see!
Those wondrous worlds, that ever fly,
And onward roll, in majesty.

Hark! to the hum of life, the chime
Of happiness, the busy glee,
The ceaseless beat, and pulse of time,
Throbbing thus tumultuously.

Come to the fields,—for ever there,
Is the Almighty's Holy Writ;
No dark, deep secrets, bring despair,
Our own hearts declare—disclose it.

All nature, its high truths reveals;
Its messenger—the lightning's flash,—
Th' elation the happy spirit feels;
Its eloquence the thunder's crash.

Th' ocean, th' air, its Prophet sages,
The harmony and voice of birds,
Nature's glories are its pages—
Its types, its letters, and its words.

Remember, man, of this thou art
The most wonderful—of the whole
The nobler and loftier part—
But thou, hast an immortal soul.

All perishes,—the vast, the grand;
Yon moving worlds, and all on high,
Struck and crushed by the Almighty's hand;
Save thou, immortal! all shall die.

A. L. E.

Philad'a, Dec. 1st, 1847.

For the Farmers' Cabinet.

Hints for Horticulturists and Lumbermen.

Mr. Editor,—I take the following extract from Dr. Liebig's great work on Agricultural Chemistry. It may be found in the chapter headed "The Art of Culture."

"A new and peculiar process of vegetation ensues in all perennial plants, such as shrubs, fruit and forest trees, after the complete maturity of their fruit. The stem of annual plants at this period of their growth becomes woody, and their leaves change in colour. The leaves of the trees and shrubs on the contrary, remain in activity until the commencement of the winter. The formation of the layers of wood progresses, the wood becomes harder and more solid; but after August the leaves form no more wood; all the carbonic acid which the plants now absorb is employed for the production of nutritive matter for the following year; instead of woody fibre, starch is formed, and is diffused through every part of the plant by the autumnal sap. According to the observations of M. Heyer, the starch thus deposited in the body of the tree, can be recognized in its known form by the aid of a good microscope. The barks of several aspen and pine trees* contain so much of this substance, that it can be extracted from them as from potatoes, by trituration with water. It exists also in the roots and other parts of perennial plants. A very early winter, or sudden change of temperature, prevents the formation of this provision for the following year; the wood, as in the case of the vine stock, does not ripen, and its growth is in the next year very limited. From the starch thus accumulated, sugar and gum are produced in the succeeding spring, while from the gum those constituents of the leaves and young sprouts which contain no nitrogen, are in their turn formed. After potatoes have germinated, the quantity of starch in them is found diminished. The juice of the maple tree ceases to be sweet from the loss of its sugar, when its buds, blossoms and leaves attain their maturity. The branch of a willow which contains a large quantity of granules of starch in every part of its woody substance, puts forth both roots and leaves in pure distilled rain water, but in proportion as it grows, the starch disappears; it being evidently exhausted for the formation of the roots and leaves."

Here we have some very useful facts; indeed, the full extent of their usefulness hardly appears at first sight—it requires reflection in order to get acquainted with it. I shall treat upon it in connection with a variety of operations, each of which is highly important.

First, in connection with transplanting trees and shrubs. When these are transplanted, many of the roots are absent, and the plant deprived to the same extent of the means of external support. If this be done in the summer, when the plant has but little or no starch, and therefore no internal means of support, the plant suffers by the operation, and without great care seldom survives. But if the transplanting takes place in the winter, or at any time after the starch is deposited in its cells, and before the tree or shrub blooms in the spring, the plant does not so much suffer by the operation. It has within itself, by the aid of its starch, the means of subsistence and the first stages of growth, and therefore the roots may more readily be dispensed with. By the aid of its starch it puts out roots and leaves, and by the time the starch is all gone, it may depend upon those roots and leaves for its future subsistence. This is the reason why nurserymen advise the transplanting of trees and shrubs in the fall, winter and spring,—after August, and before the plants bud in the spring.

Owing to the carelessness often displayed in transplanting, the earth is not placed close to, or in contact with the roots of the plant, and the consequence sometimes is, that when the plant puts forth its small roots, they do not meet with the earth that should surround them, and therefore wither and die. This is one reason why it is better to transplant trees and shrubs in the fall instead of the spring, because during the winter and before the time of budding in the spring, the rains may settle the earth around the roots well, and the efforts of the plant when it puts forth its tender roots, are availing; and if all the other circumstances are equal, the chances for a successful operation of transplanting are good.

We come next to consider our text in connection with grafting. When a graft is well supplied with starch, as it is in a healthy tree, after, say November, and before April, it has the means within itself of growth, provided it has moisture. The graft should be so placed in the stock as to secure this end, if almost absolute certainty is aimed at. Remember the proper time to take grafts from the parent stock is after November and before April, for reasons stated above.

The same remarks with little variation, may apply to slips, cuttings, &c.

So much for the Horticulturist merely,—

* It is well known that bread is made from the bark of pines in Sweden during famines.

but we now come to show how important our text is to all who use wood—and who does not? It will readily occur to the minds of students, that when wood is filled with this starch, that it offers strong temptations to hungry insects, who are in search of food. They readily bore into it, eating the starch but unfortunately damaging the wood. This temptation is particularly great, when the starch by the addition of moisture and warmth, assumes the form and sweetness of sugar. It is then extremely liable to be attacked by insects, and if we would avoid them, we must cut such wood as we would use for mechanical purposes, in the summer, after the tree is in full leaf, and before August. This is highly essential; the tree has then but little or no starch in its cells, and when the wood becomes dry, it becomes very hard, and there being no temptation for the insect it does not attack it, and thus a great and often vexatious difficulty is avoided. Wood intended to burn, would be better cut in the winter, for then the starch as well as the wood, may be burned, and wood is easier cut when dry, when it is filled with starch, than when not, for in the latter case it is nearly as hard as iron.

Starch decays more rapidly than woody fibre, as it is more liable to chemical change. Lumber, therefore, that is filled with starch, or that has been cut during the winter, rots much more readily than that cut during the summer.

When clearing land it is desirable that stumps should not throw up shoots. This they are very liable to do when the tree has been cut during the winter, as the stump and roots have been well supplied with starch, and this starch enables the stump to throw up the shoots. If we would get rid of this difficulty, therefore, we will clear our land in the summer.

There is but one other view that may be taken of our text, that presents itself to my view at present, although there may be others that my attention may not now be directed to. That view is this—when fruit trees bear a very heavy crop late in the fall, they are apt to exhaust their supply of carbonic acid in the formation of fruit, and leave none for the formation of starch, for the use of the leaves and roots of the following year. Hence during the year after such late and heavy bearing, they appear sickly and weak, and although they often blossom finely, they bear little or no fruit. But during the fall of the non-bearing season, they again acquire their supply of starch and gum, and the next year, if other circumstances are equal, they bear their usual fine crop. On this account they are said to bear fruit *naturally* every other year, when if the cause was understood and the tree supplied well with lime, ashes, and ground charcoal, so that it might absorb and assimilate sufficient carbonic acid for its fruit and the formation of its starch—the tree might be made to bear every year—*naturally*.

I have necessarily been brief in all these points, Mr. Editor, but an intelligent mind and good judgment cannot fail, when opportunity offers, to make a good use of these hints,—and knowing you have many such minds among your readers, I submit them to you for publication. CHEMICO.

Chester County Farms.

IT is one of the modes of ascertaining the state of cultivation and mode of farming in a particular district, to ascertain the price at which farms sell. The following list is taken from a late number of the Village Record, published at West Chester, in this State, and will enable one to form—even without knowing the precise farms—a tolerably fair estimate of farm land in the vicinity.—ED.

THE farm of Levi A. Gheen, in West Whiteland, near the Indian King, has been sold for $59 per acre. It was bought by Richard White.

The farm of Mahlon Phillips, deceased, was put up and bid to $87 per acre, on the 3rd inst. It is located in Kennet township, and contains 101 acres.

The farm of Dr. Weeks, in the same section of the county, was bid in at $75 per acre—117 acres.

The farm of Mr. John Climenson, Uwchland, was sold on the 20th inst. for $76 per acre—100 acres, $7,600—to Mr. George Pennypacker.

The farm of John C. Dorat, in Londongrove township, containing 87 acres, was sold last Tuesday, to Job H. Jackson, for $6,500.

The farm of Thomas Shortledge, sold by assignee, in London Britain township, was sold on the 18th ult., 68½ acres, to Thomas Phelps, at $64 68¾.

The farm of Wm. Crooks, 126 acres, in Penn township, was bid to $33 12½ on the 20th inst.

The farm of Thomas Speakman, in Londongrove township, 136 acres, was sold a few days since to Mr. Cox, of Willistown, at $44.

The farm of Lewis Ferron, deceased, in Londonderry, 52 acres, was sold about the beginning of the present month, at $50 25 per acre, to Thomas Farra.

The farm of Conrad Keeley, deceased, in Uwchland, was sold by the executors, at $46,00, 125 acres, bought by Jacob Keeley.

The farm of George Fetters, deceased, in W. Pikeland, 68 acres, was sold on the 9th, at $45,91, Eli Pennypacker, purchaser.

The farm of James Pennypacker, deceased, West Pikeland, 147 acres, was sold on the 4th inst., at $61 12½, to Harman Pennypacker and others.

The farm of Benjamin Harley, Uwchland, on the 21st inst., was bid to $64, about 100 acres, but not sold.

The farm of David Hunter, deceased, West Nantmeal, 204 acres, was sold on the 24th inst. at $42 per acre.

The Use of Acorns.—Farmers in various parts of Germany, particularly in some districts of Saxony, successfully employ acorns for the winter fattening of sheep. English farmers, however, either totally neglect them, or use them almost solely for the feeding and fattening of hogs. In Hertfordshire and in the new Forest district of Hampshire, hogs, in many instances, receive very little other food than acorns, and commonly attain great firmness and weight, and yield a decidedly good and well-flavoured pork. Yet such as are, for a short time withdrawn from the acorn diet, and have their fattening completed by four or five bushels of barley flour or peas meal to each, are judged by some persons to yield pork of still better substance and superior flavor. The farmers of Gloucestershire bestow nearly as much care on the fruit of their oak trees as upon the produce of their orchards. They seldom sell their acorns, or can find any in the market, yet usually estimate their value from 1s. 6d. to 2s. per bushel, according to the price of beans; and they regard them as decidedly superior to beans at once for fattening hogs, for increasing their weight, and rendering their bacon firm.—*The Rural Cyclopedia.*

A Portrait of an Anti-Book Farmer.

He ploughs three inches deep, lest he should turn up the poison that, in his estimation, lies below; his wheat land is ploughed so as to keep as much water on it as possible; he sows two bushels to the acre and reaps ten, so that it takes a fifth of his crop to seed his ground; his corn land had never any help from him, but bears just what it pleases, which is from thirty to thirty-five bushels, by measurement; though he brags that it is fifty or sixty. His hogs, if not remarkable for fattening qualities, would beat old Eclipse at a quarter race; and were the man not prejudiced against deep ploughing, his hogs would work his ground better with their prodigious snouts, than he does with his jack-knife plough. His meadow lands yield three-quarters of a ton to a whole ton of hay; which is regularly spoiled in curing; regularly left out for a month, very irregularly stacked up and left for the cattle to pull out at their pleasure and half eat and half trample under foot. His horses would excite the avarice of an anatomist in search of osteological specimens; and returning from their range of pasture they are walking herbariums, bearing specimens in their mane and tail of every weed that bears a burr or cockle. But oh, the cows! If held up in a bright day to the sun, don't you think they would be semi-transparent! But he tells us good milkers are always poor! His cows get what Providence sends them, and very little besides, except in winter, then they have a half peck of corn, the ears a foot long thrown to them, and they afford lively spectacles of animated corn and cob crushers; never mind, they yield, on an average, three quarts of milk per day! and that milk yields varieties of butter quite astonishing.—*Western Farmer and Gardner.*

Treatment of a Contrary Horse.

When a horse gets in the way of being contrary and will not go forward at all, it is common to apply the whip freely. Solomon says "a whip for the horse," but he may not refer to cases of this kind. At any rate, it is often where thus used of no benefit, only the gratification of the enraged driver. A method which we have known more successful is to treat the animal very kindly. His contrary disposition is usually the result of having been fretted in some way, and kindness may overcome it. Make much of him at all times. Speak gently to him and so often that he will become accustomed to your voice. When he stops when attached to the carriage or a load and will not move, approach him in the same gentle manner. Stroke the mane and pat the hand frequently on his head. Means of this kind will have a powerful tendency to overcome his stubbornness, as brutes feel the power of kindness. We believe from what we have seen that young horses, especially in nine cases out of ten, may be successfully cured of contrary habits in this way, while the application of the whip would only increase the difficulty..—*Exeter News Letter.*

The autumn has been favourable for the ripening of the corn crop.

Cisterns for Farm Buildings.

Pure, wholesome water, as a constant beverage for man or animals, is essential to sound health. Its relative salubrity depends on the various animal, vegetable, or mineral particles, with which it may be impregnated, and the places whence it is procured. The transparency or purity of that obtained from wells or springs, varies according to the strata of earth through which it percolates. The most wholesome fluid is derived from springs issuing from pure sand-stone or primitive rocks, or from sandy soils, principally composed of granite or quartz, where it has undergone a perfect filtration. The water of lakes and ponds has similar properties in general, as that of rivers or brooks, but being less agitated, and containing more organic matter in a state of decomposition, it acquires a greater degree of impurity, and consequently is less fit for culinary use; though, on account of its softness, it may be employed with advantage for washing clothes.

Rain water collected in the vicinity of cities or populous towns, as well as in the neighborhood of marshes or mines, especially during summer, is always more or less impure. Therefore it should not be used, if it can be avoided, except for washing linen, &c., or watering plants, unless it be purified by filtration or other means. The fluid obtained by dissolving snow is somewhat purer; but of all natural waters, that obtained by melting hail is the most pure, as it contains fewer extraneous particles, in consequence of its congealing high in the air; so that it cannot combine with noxious ingredients during its descent. Like all water, however, which falls from the clouds, it contains minute quantities of air, carbonic and nitric acids, carbonate of ammonia, and other salts.

Well, or pump water, is generally less pure than any of the preceding, as it frequently contains large quantities of carbonate or sulphate of lime, which are the cause of its "hardness," and the property of curdling soap. In all large towns, that have long been inhabited, the wells are generally rendered unfit for use, in consequence of the ground having been tainted by church-yards, vaults, and other nuisances, which, doubtless, is the cause of much suffering, and even of the shortening of life itself. Therefore, in all regions where lime-stone or other impurities in the soil abound, or where the farmers unavoidably have to sink their wells to a great depth, we would recommend the construction of cisterns near all of the principal farm buildings for retaining the water which may fall from their roofs. By this means a large supply of wholesome water may be had all the year round, at a comparatively small cost, which will not only be essential in all purposes about the house, but will be found useful in irrigating the garden, as well as for the watering of stock.

The most convenient and durable mode of constructing a cistern, is, to make it of a circular form, under ground, with the bottom and sides lined with stone or bricks laid in hydraulic cement; and in many cases mortar may be plastered directly on the sides of the pit without the aid of bricks or stone. A cistern, eight feet in diameter and nine feet deep, will hold about one hundred barrels, and will require three thousand four hundred bricks to face its sides. The cement to be employed should be of first-rate quality, such as that used in the construction of the Croton acqueduct, or the Erie canal. If this cannot conveniently be obtained, a very good article may be made of four parts brick dust, finely screened; eight parts fine, sharp, fresh water sand; twelve parts lime completely slacked by burying in the ground, so as to exclude the air during the process of slacking; three parts powdered quick-lime, newly burnt; and three parts powdered charcoal. First, mix the slacked lime, brick-dust, charcoal, and sand with water sufficient to make a mortar thinner than usual, then sprinkle in the quick-lime. Mix well with a trowel, and use immediately, as it will soon grow stiff and hard.

Cisterns should be completely covered with planks or stone, so as to exclude all insects, leaves, and dust. If the buildings be situated on a hillside, it would be preferable to conduct the water to the place where wanted for use by means of a pipe, without the labor of pumping, or lifting it out by hand.—*American Agriculturist.*

The preceding remarks may be profited by in many places—but in many others where a stream of water and a fall of a few feet are at command, one of Birkenbine's Hydraulic Rams is far preferable to a cistern on various accounts.—Ed.

Cranberries.

The cultivation of this pleasant sub-acid fruit is now, we perceive, becoming quite common. In their management various methods are adopted—some planting them in bogs and swales, and others, with equal success, cultivating them on sandy soils, and indeed in almost every variety of situations which can be conceived, or in which the plants can be induced to take root. It is stated in one of our agricultural exchanges, that a Mr. S. Baies, of Billingham, Norfolk Co., Mass., cultivates this crop with surprising success. Mr. B. says that "low meadow land is the best for them, prepared in the first

instance in the same manner as for grain. The wild cranberry is then transplanted into this, in rows twenty inches apart. At first they require a slight hoeing; afterwards they spread and cover the field, producing crops annually thereafter without further culture. In this condition they produce much larger and finer fruit than in their wild state—the yield being from two to three hundred bushels per acre, worth, on an average in the Boston market, at least one dollar per bushel." Mr. B. furthermore states, that "a damp or wet soil has generally been considered necessary to their successful cultivation," but thinks this not essential, as any soil not inclined to *bake*, will answer. He recommends the early spring as the most proper time for transplanting. In several experiments that have been made, the cranberry has flourished and fruited well when planted on soils of a light character, and we can see no good reason why it should not succeed under such management, as well as other low ground productions. The elm, so common in our ornamental enclosures, is never found growing naturally on our hills or plains, yet it appears to be benefitted rather than injured by removal to them, and the same is the case with several other trees and shrubs.—*Maine Farmer.*

Cattle for Fattening and for the Dairy.

The following table exhibits the distinguishing characters of animals possessing the properties of fattening or grazing, as compared with those which indicate the faculty of yielding milk, viz:

FOR GRAZING.

Head—small; muzzle fine; ears large, a little erect, and transparent.

Neck—short, light, and nearly straight; small from the back of the head to the middle; dewlap large and loose.

Chest—wide and round; ribs deep and barrel-shaped; great depth behind the elbow.

Back—straight from the shoulder to the tail, and well filled up with muscle; hips wide.

Belly—nearly straight.

Quarters—full, long, and large; the muscles reaching close down to the joints; legs short; bones small and flat.

Tail—falls perpendicular from the line of the back.

Udder—firm and fleshy, and the milk vein small.

FOR THE DAIRY.

Head—large; muzzle coarse; ears rather pendent, and tinged yellow inside.

Neck—long, slender, and tapering towards the head; with but little loose skin below.

Chest—deep, but narrow, and strikingly deficient in the substance of girth; ribs flat and wide apart.

Back—narrow; joints wide and loose; bones prominent; hips narrow.

Belly—large and drooping.

Quarters—muscles thin, but very firm.

Legs—long, coarse, and inclined to be sickle-hammed.

Tail—set on low; haunch drooping to the rump.

Udder—large, thin, and loose, and the milk vein very prominent.—*Farmer's Magazine.*

Interesting Agricultural Experiment.

On the 12th of September, we stated that an experiment had been made upon a farm in South Lancashire, in the growing of roots, that might, if successful, serve to counteract the injurious effects of the failure of the potatoe crop, both as regards the farmers and the public. We have now the pleasure to state the result of this experiment, which has answered, and even exceeded, the expectation we then formed of its success.

The land occupied by this experiment, we found, on correct measurement, to have been three acres, one rood and eighty-three yards. The land was sown in alternate drills at a distance of thirty inches between each, first a drill of potatoes (cups, as they are called,) and then a drill of Swedish turnips: so that the potatoe tops in one drill did not come in contact with those of the next drill of the same root. The potatoes and the turnips thus grew together till about the middle of last month (October.) when the potatoes, which had been partially attacked by the prevailing disease, were dug up and sent to the Manchester market, where they were sold at 12s. per load of three bushels; but the turnips remain in the ground, and are growing vigorously, each drill having now twice the accustomed room for nourishment and growth.

The quantity of potatoes produced proved to be 68½ loads of large, 10 loads of small, and 5 loads of decayed potatoes, which sold as follows:—

68½	loads at 12s.	£41	2 0
10	loads of small at 6s. . . .	3	2 0
5	loads bad, unproductive.		
		£44	4 0
The turnips, as we have stated, are still in the ground, but from their appearance the crop may be safely estimated at 20 tons—value, 27s. pr. ton		27	0 0
		£71	4 0

The yield of cup potatoes, on an average of years, is 60 loads per acre, and the average price in the Manchester market, 5s. per load; so that if the whole field had been set with potatoes before, the quantity produced would have been 200 loads, at 5s.	50	0	0
Excess of produce in money this year over an average of years	£21	4	0

Independent of this gain in money, we have here a practical security against the future failure of the potatoe crop, or of having that failure made up by the two crops united. It may be proper to add that the manure used in the cultivation of this field was six cwt. of guano per acre, sown in drill, of the value of 6s. per cwt., and that the soil is reclaimed peat earth, which abounds to so great an extent in Lancashire and in most of the Irish provinces. As this favorable result is, we believe, principally attributable to the separation of the potatoe drills from each other, we see no reason to doubt but that under this system of husbandry the results would be equally favorable on any land suitable for the growth of these valuable roots. The risk of an experiment is very inconsiderable; and we recommend its adoption, to a certain extent at least, so long as the country shall suffer under the visitation of the loss of one of the most important articles of food for the people.—*Leeds Mercury.*

Royal Agricultural Society of England.

To show a little the extent of the operations of this noble Society, we take from the minutes of the last Annual General Meeting held on the 12th of Twelfth month last, at the Society's house, Hanover Square, London, the Earl of Egmont in the chair, the following statement of its accounts. It is not necessary to say to the readers of the Cabinet, that if we multiply the number of pounds sterling by five, we shall about have the amount in dollars.

The finance committee reported, that during the past half year 302 new members had been elected—56 had died, and 789 had been struck off the list, on account of arrearages of subscription not being paid up so far back as 1841 and 1842. There are still arrears of subscription due for 1843 to 1846 inclusive, £5,375! The capital of the Society invested in the public funds, amounts to £7000, or about $35,000.

Col. Austin stated that he would read the balance sheet of the Finance Committee, "but I wish," said he, "to premise that it must be borne in mind that the accounts are made out for the half year only; that is the half year ending on the 30th of June, and that this is the reason why sums since received on account of arrears are not credited. The letters which have this year been addressed to the members in arrear, calling for payment of their subscriptions, have been answered in an unusually quick and rapid manner; a fact which must be gratifying to the meeting." Col. Austen then read the balance-sheet, from which it appeared that—

Half-yearly account, ending June 30th, 1846.

Receipts.

	£	s.	d.
Balance in the hands of the bankers, 1st of January, 1846,	760	2	5
Balance in the hands of the secretary, 1st January, 1846	14	12	9
Dividends on stock	110	8	8
Sale of stock	1174	10	0
Life-compositions of members	372	0	0
Annual subscriptions of governors	747	10	0
Annual subscriptions of members	2666	12	10
Sale of Journal	139	10	2
Sale of Cottage Tracts	3	3	1
Receipts during the half-year, on account of the Country Meetings	4	5	9
Payment made in error by Messrs. Child and Co. to Messrs. Drummond	45	0	0
	£6046	15	8

Payments.

Permanent charges	£270	12	6
Taxes and rates	21	8	2
Establishment charges	935	12	10
Postage and carriage	27	5	6
Advertisements	13	5	0
Expenses of Journal	1568	7	10
Prizes	260	0	0
Payments during the half-year, on account of the Country Meetings	296	1	7
Subscriptions repaid	11	6	0
Miscellaneous payments	6	19	3
Repayment to Messrs. Child of sum paid in error	45	0	0
Balance in the hands of the bankers 30th June, 1846	2564	17	10
Balance in the hands of the secretary 30th June, 1846	25	19	2
	£6046	15	8

Steam Plough.—A French paper, *La Semaine*, announces the invention of a steam plough, or rather the mode of digging by means of steam, from which the most wonderful results are anticipated. The inventor is a young medical man, named Barat. The Journal states that one of the two-horse power was in operation at the residence of the maker, who was constructing another of double the power. The machine proceeds along the field, and digs the ground with the greatest precision. Two beams furnished with five mattocks each, act successively upon the soil, loosening it to the depth of 12 or 15 inches, and pounding it as small as compost. By using only one of the beams, a tillage of the usual depth can be effected.—*Farmer and Mechanic.*

Philosophy for Farmers.

The relaxation of commercial restrictions has had, among other effects, that of giving an impulse to agricultural industry, which has long borne the reproach of being behind the age. According to some authorities, agriculturists generally have proved themselves the most unteachable of mortals, willing rather to obey a mechanical routine, than to be guided by true principles. Whether such be the case or not, the ceaseless labours of the press are doing much to remove ignorance in every quarter; and science, which gradually insinuates itself into all human operations, is doing for agriculture what it has done for manufactures—taking it out of the domain of uncertainty, and showing it to be equally dependent on natural and philosophical principles. With these aids, and a more active competition, there can be little doubt that agricultural pursuits will soon become characterised by a high degree of commercial activity.

It frequently happens that valuable scientific treatises are published, which remain totally unknown to the general reader, and thus become lost for purposes of practical utility. A paper of this character, on "The Philosophy of Farming," which appears to us to be deserving of wider circulation, has just made its appearance in the last volume of the "Manchester Philosophical Society's Memoirs." According to the author, Mr. Just, "all cultivation consists in bringing to the plant, or placing within its range of action, such a supply of material as natural means cannot furnish it with in the situation where it grows. In order to cultivate well, it is therefore as necessary to know what plants want, as for the builder and contractor of material to know what is required for building." It is now pretty well understood that the growth of plants depends less on solid nourishment, than on fluid and atmospheric agents, of which the chief are carbonic acid gas, azote and water. In chemical language, these comprise four atomic elements; and according to their presence in the soil, is the abundance and deficiency of the crop. On the continent, the investigations of Liebig and Dumas on this important subject, as well as those of scientific men in this country, have brought to light many important facts and data, the whole extent of whose application is yet a matter of research.

Perfect drainage appears to be no less essential for fields than for towns: to secure an abundant supply of the elements above enumerated, the main requisite consists in due permeability of the soil, so as to admit of proper drainage. Hence it is that clayey lands, by favouring accumulations of stagnant water, are in so many instances unproductive. The disposition of the drainage should, however, be such that the whole of the soil concerned in the growth of the plants is permeable by the air, promoting a constant filtration and succession of materials that contribute to vegetable formations. Rain brings down ammonia from the atmosphere, and its beneficial effect on lands is greatly increased where the drainage is good, as the atmospheric particles then find their way readily to the roots of the plants, and the mineral substances in the soil are more effectually dissolved. "The two fundamentals of all good farming," says Mr. Just, "consist in thorough percolation of water through the soil, and a constant accession of air." Rapid drainage is not less important; main drains ought to cease discharging at the end of four or five days, instead of, as at present, as many weeks, ceasing only in long droughts; and to be dug so low, that the superabundant moisture of the surface shall be at once effectually discharged, with a constant current, otherwise the drains soon become choked by mud. It is evident that the mechanical arrangement of drains must vary with the nature of the locality to be drained; and no attempts at drainage should be made without first ascertaining the nature of the subsoil. The following data are given as guides to the inexperienced: "If, when the soil has been carefully removed from an area of a few yards in extent, and the surface of the subsoil has been left to dry, water is found to accumulate within it, when dug into, then that subsoil is drainable, and will draw water from the surface according to the depth dug; and the ground may be made perfectly dry by the usual kinds of drains, provided those drains be laid sufficiently deep, and allowed a free discharge. Whereas, if, after the same preparation, the subsoil or clay, when dug to a greater or less depth, be perfectly dry, then no drainage can be effected therein by ordinary methods, and recourse must be had to opening transit for the surface water in open channels, so that the supersaturation of the soil may run off as directly and quickly as possible." The author contends that land cannot be drained too dry, as fluids are not so essential to the growth of plants as aerial and gaseous matters, and perfect aeration is as much required as perfect drainage. Air brings constant supplies of material from every quarter; and where the soil is kept properly drained, conveys nourishment in certain but invisible forms to the roots of crops. Another advantage attendant on aeration of the soil, is the

increased economy and effect of manure; the more perfect the pulverisation of land, the more immediate is its contact with, and absorption of, the manures thrown into it; the descent of new particles into the subsoil is facilitated, and the whole quantity of productive soil is increased, with a fund of capability, so to speak, always at command within it.

From discussing the mode of treating soils, Mr. Just passes to that of sowing seeds. "Scattering seeds," he says, "indiscriminately over the surface of the ground previously prepared for their reception, is no more sowing them, than tumbling stones into trenches properly dug for the foundation of a building is laying those foundations." The object of sowing is to secure proper germination of the seed. Seeds are to vegetables what eggs and ova are to animals; the condition of development of the latter is warmth and protection. With seeds it is "a proper degree of temperature, a sufficiency of moisture, and a free access of air, with exclusion from the direct action of light." Hence the great advantage of complete pulverisation of the soil, that the seeds may not be buried deeply, and yet at the same time sufficiently covered: for, if within the influence of light, the chemical change of the farinaceous matter of the seed into living tissues is retarded; on the other hand, if buried too deeply, the plant is so much exhausted by its efforts to reach the surface, as to impede materially its future growth. A large amount of seed is annually lost by falling into the hollows between the furrows of ill-ploughed land. "It is not to please the eye only that the ploughmen of Westmoreland, Cumberland, and other well-cultivated counties take so much pains in drawing their deep furrows as straight as a line can make them, and laying them so compact, that not a crevice between them can be found in fields of many acres; but it is to favour this grand and fundamental principle of growth, though perhaps in few instances this service may either be known or appreciated by them." The importance of these considerations becomes manifest, when regard is had to the physiology of seeds. The greater part of their substance is simple nutritive matter, intended for the support of the young plant until it can take care of itself. But if this nutritive matter is to be expended in efforts to escape from unnatural circumstances, it is clear that the capacity for growth will be diminished. A starved seed can no more grow up into a healthy plant, than a starved infant into a healthy man; and if so much care be bestowed on exposing steeped barley frequently to the air, to insure simultaneous germination, while being converted into malt, ought less care to be shown to seeds while in the soil, when the food of millions is dependent on their proper growth.

The waste and misapplication of manure in this country is deplorable, and have been so often complained of by writers, that it might seem superrogatory to insist upon it farther; but there are some subjects to which attention can only be successfully directed by constant iteration and re-iteration. In many parts of Germany and in Belgium, the most rigid economy prevails with regard to all waste animal and vegetable matter, and its proper application to land. In China, the same course has been pursued for ages: and, according to Mr. Fortune's recent work, is still maintained in full activity. The measures now in contemplation for the effectual sewerage of towns are fraught with incalculable advantage to the agriculturist; but without some acquaintance with chemistry, no person can be certain that the manure he applies is that required by the soil, and a distinction must be drawn between germination and vegetation. Highly azotized manures are favourable to the latter process, but unfavourable to the former. Mr. Just says, "Guano sown along with the seeds of turnips prevents their germination, whereas, when scattered over the soil, or buried in the drills beneath the seeds, it promotes the vegetations of the plants to a very great extent afterwards. The same is the case when liquid manure, from banks in farm-yards, is applied to soils previously to sowing the seeds. I have known turnips sown on ground so treated, fail to germinate entirely; and by injudicious application of night-soil as a dressing for crops of barley, I have seen numbers of the grain totally destroyed by contact with it, and those which escaped pushed on to such a rank vegetation after this destruction, that they could neither fructify properly nor ripen."

The same principle holds good with regard to propagation by means of buds and tubers; and here, at the risk of prolonging what is felt by many to be a wearisome subject, we quote Mr. Just's observations on the treatment of the potatoe. "The cuttings of potatoes," he writes, "or the whole tubers which we plant, have to undergo a similar change in spritting as seeds undergo in germination, and require similar conditions to favour that change and aid germination. Yet in our treatment of this most valuable and accommodating of all plants given to man for food, we err more against nature than in all others put together. Patient of every climate under the sun, we forget that it can be subject to any wrong, or require

any of our care or concern for its welfare. Prolific beyond our wants, we have glutted domestic animals with it, and employed it largely in the arts and distillery to contribute to our luxuries. Yet there is a limit to all things, and we are approaching the limits of the abuse which we can unrequitedly heap upon it. Something is wrong already both in the field and in the store; already it has partially failed in its germination during the spring; already it has become the prey of disease in its vegetation and maturation in the autumn. Nature is vindicating her right to be obeyed; and since we have neglected to learn from her by lessons of examples which she has offered, she seems determined to make us wise by dear-bought experience—to make us feel, that we may remember.

"The first law of nature against which we transgress with regard to the potatoe, is our total neglect of the due preservation of our seed potatoes. If they are only good for food, we never inquire whether they are fit for planting. Yet were we but to reflect one moment, we should soon see how unnaturally we treat them. Nature, when she alone takes care of them, keeps them within the soil—like all other subterranean buds—during their season of repose; and because, in the warm climates, where they are indigenous, they cannot easily be cut off from a due temperature for their germination, she checks it by keeping them dry in the soil. We, on the other hand, dig them up from the ground, because we fear, and properly, the effect of frost upon them; but instead of keeping them dry, we heap them up wet in immense quantities on the ground, and cover them over there, to keep them so, *with soil*, thereby furnishing them, if they do not rot, with one requisite for germination; while the masses themselves raise and keep up the temperature to supply them with another, so that germination has not only commenced, but proceeded considerably, when we dig them up again for planting. Then, calculating upon the extraordinary degree of vitality with which nature has endowed the tubers, we pull off the sprits, cut up the potatoes, and endeavour to reduce that vitality to as low an ebb as possible before we plant them. If, by the spritting of potatoes, the whole of the diastase, situated just below the embryo in seeds, be expended, then there is no provision left for the conversion of fecula into saccharine matter for the formation of the first tissues of germination, and germination must therefore fail."

When it is borne in mind that the cuttings, weakened as described, are in most instances planted in highly azotised soils, surprise at the general failures which have taken place will be greatly lessened. The remedy consists in storing up the potatoes intended for seed in places perfectly dry and dark, and instead of one large mass, in small heaps, so that all tendency to generate heat may be obviated. The precautions with regard to the aeration of young grain crops are equally to be attended to with the young plants of potatoes. Without frequent stirring of the soil while the roots are forming, and complete aeration or ventilation, however favourable other circumstances may be, proper growth is not to be expected. The objects to be striven for by the agriculturist and cultivator are of such importance, as to reward any degree of perseverance. Implicit obedience to natural laws never fails of commanding success. Nature is not to be forced or diverted from her economy: the bringing to bear a little plain practical common sense on her multifareous modes of action, must tend to the realization of the sound theoretical views of the chemist and meteorologist.—*Chambers' Journal.*

For the Farmers' Cabinet.

Acclimation of the Fig Tree.

To the best of our recollection there has not been published any account of the best method of acclimating the fig tree; and this is why I should like to trespass somewhat in your columns.

John Naglee, Esq., in Front street, near Brown, about fifteen years ago, planted a fig tree in his garden. For many years he was in the habit sometime in the fall of the year, of placing around the tree seventy or eighty bundles of straw; this was bound round with cords, so as to resemble a tall stack—the straw was removed in the spring.

During the last two winters the tree has received no protection whatever. It produces as well as formerly, and may be considered as perfectly acclimated.

B. G. Boswell.

Philadelphia, Dec. 9th, 1847.

To Prevent the Smoking of a Lamp.—Smoke is the result of imperfect combustion. Combustion is always imperfect when more matter is decomposed than is consumed. This is evident from the fact, that smoke may be collected and *burned*. To prevent the smoking of a lamp, therefore, it is only necessary to prevent the decomposition of too much oil. This is done by *lowering* the wick till the blaze terminates without smoke. A little care in *trimming* a lamp will save expense—an unnecessary waste of oil—prevent the blackening of the ceiling, and the offensive and unwholesome smell occasioned by the smoke of a lamp.—*Southern Planter.*

The Expense of Farm Yard Manure.

BY D. P. GARDNER.

THERE are few farmers who adopt the plan of manuring to any extent, who have not been on mature reflection, somewhat surprised at the great expense they incur. When the cost of raising and storing the provender, of feeding out, of handling the manure, of carting to distant fields, of plowing, and in a great measure for the purpose of obtaining a fresh supply of provender, are duly considered, the expense is by no means trifling. It is indeed urged that stock is necessary to the farmer, and that he finds it profitable to feed such well; but I am not considering the question whether a farm be so situated as to make it profitable to graze, or make cheese and butter, but the more simple question of the expensiveness of employing farm yard manure as is now done or amending the system. It is urged by British agriculturists, that a supply of neat cattle is an essential to good farming, and that the farmer should be content to gain the manure only for his time, labour, provender and capital. The plan adopted under this recommendation consists in purchasing a number of Highland or Irish steers in the fall, when they are driven into England for the purpose, and maintaining them until spring, when they are sold in the neighbouring markets to the butcher; and we are assured that if the animals sell for as much as they cost in the autumn, the farmer is well paid for the heavy investment of capital in land and animals by the manure reserved. It is not denied that many make a profit of some kind besides, but this is the dictum of agricultural authors and unfortunately the experience of many worthy men. It is further considered that more than a third of the farm should be set aside for the purpose of supplying the hay, turnips, mangel wurzel or other necessary provender to carry out this scheme. Without desiring to push the expense to the highest figure, it is however useful to consider what may be the effect of this recommendation amongst us, allowing a fair amount of profit on the feeding. It is stated by residents of Dutchess county, in New-York, that it is a common practice to take up western cattle in the spring or during the early summer, graze them untill fall and then send them to market. The cost of the animals averages $20 a head, and they are sold at $30 each, in New-York market. On farms of 200 acres 100 head can be taken and this will pretty nearly exhaust the productive resources of the land.* Let us suppose that the animals exhaust the provender of the farm and the expense will be at 7 per cent. per annum,

Interest on land, worth $50 the acre,	$700 00
Interest on the investment for 6 months, 100 head at $20 each, - - -	70 00
Expenses of labour. 2 men and a boy 6 months, at $18 for each man and $10 for the boy, - - - -	276 00
Expenses,	$1,046 00

The profit on the cattle will be $1,000; the farmer does not therefore at this rate obtain a return of seven per cent. on his capital, in as much as he pays $276, for labour; and therefore if instead of farming, he made an investment of his money ($12,000) in bond and mortgage at 7 per cent. reserving his house, he would do much better than by this system. The numbers given above represent very nearly the condition of things, the only difference being that a small surface is in corn, grain, orchard and garden, which do not produce more than sufficient to maintain the stock used by the family and the vegetables and grain for the table. The manure dropped is left on the field and wasted very considerably from this cause, little is collected, and the whole broken and spread in the spring does no more than maintain the land in sufficient heart to produce the necessary crop for the next season. There is little doubt that this process is without economy, but it is extensively practised; and it is a subject of consideration whether it be not as profitable as any system in which the feature of feeding cattle for manure is introduced; to arrive at a fair conclusion on this subject we must omit all profits derivable from milk, cheese or calves, for in this case the stock is made a means of selling the crop as well as supplying manure, and they will consume more food and be a more permanent portion of the investment. It is yet a question with practical men, who are within reach of a good market, whether corn or grain can be profitably turned into flesh, and we are not disposed to entertain this matter, but are merely drawing attention to the great expense of farm yard manure.

Suppose, however, that all the straw is economized on a partially arable farm and this is added to the yard, the other provender being derived from a third of the land; will the operation be much more profitable? The number of head of stock kept will depend upon the condition of the grass land, which must be manured to keep up a fair yield, and little more than the straw will go back to the land from whence it came. The addition will unquestionably sustain the land in

* The statement of Mr. Wyckoff at the Farmer's Club, New York.

some degree, but by no means to the extent imagined. We are in the habit of considering the successes of British agriculture without remembering two great points, that the farmers of that country expend annually for one article of manure, bones, derived from foreign countries the prodigious sum of $3,000,000 without considering the home supply; that guano, nitre, plaster, salt, and lime are employed at such rates as to become a still greater charge: and secondly, that the corn laws under which their agricultural prosperity was fostered was a premium of 53 cents a bushel for wheat, or upwards of $10 an acre, by which this system of manuring was paid. Had it not been for the mineral and foreign manure, does any one believe that the agriculture of that country would have prospered? In Norfolk, a poor county originally, now one of the most fertile in England, it is the foreign manure much more than any other cause which has raised the farming. The contiguous port of Hull received in 1835, 25,700 tons of foreign bones in the year. No extra stock is kept in Flanders to supply manure, but that economical people resort to the cities and to other expedients.

In the foregoing remarks my design has been more to induce our farmers to think upon the subject, than to make an estimate of the cost of yard manure. The scene of my agricultural experience is not the State of New York, but central Virginia, and I cannot therefore speak with certainty, but rely upon the representations of others. The price of home-made manure in this State, in the river counties, is estimated at more than the cost in the city of New York with carriage and handling; this becomes in Dutchess county equal to 62½ cents for a single horse load of about 25 bushels delivered at the wharf. It is customary to add twenty or more loads of this manure to the acre for corn, at an expense, with labour, of nearly $20. If I am not correctly informed, I trust the reader will proceed with me, using his own calculations, but this estimate cannot be far from the truth, when it is remembered that the greater part of our intelligent farmers shrink from the expense, and have arrived at the conclusion, that for a man of limited means, the exhaustion of the soil is the most profitable system of farming.

The fermentation of yard manure is in no way different from that which occurs in other forms of organic matter placed under similar circumstances. The process is indeed a peculiar form of chemical decomposition or molecular change, by which the elements present, take on new combinations of a more permanent character. Water, carbonic acid and ammonia, are the principal resultants of this change; whilst heat is an incident. Practical men are altogether carried away by this phenomenon, regarding it as something occult, and beyond any solution of science, whilst indeed it is a process so simple and manageable, that the most ignorant may be taught in a few minutes to control or modify it. So far as I can make out the origin of the peculiar respect of farmers for yard manure, it seems to depend on this mysterious change. I think that Judge Buel and many others, have assisted to engraft on agriculture a sentiment to the effect, "that fermentation is the sheet anchor of the farmer." How far preconceived ideas and a want of knowledge of the process of fermentation have influenced these writers, will appear from the following considerations.

The agricultural world has been shaken by the contentions of those who advocated the use of long manure, and those, who denouncing this practice, have set their dependence on short or well rotted manure. Both these partizans have placed implicit confidence in the action of fermentation; but one set have in truth recommended such manure as was undergoing this change, whilst the latter prefer dung (well rotted,) which has long ceased to be in a state of fermentation. So that whilst in their essays they have denounced any thing but fermentation, they have uniformly used manure not undergoing this change. So soon as the dung-hill ceases to give out considerable heat, fermentation has stopped, and every practical man knows, that in six, ten, or twelve months, when the manure is thoroughly broken and short, there is no shade of heat in it. Other excellent farmers who have nailed on their standards the dogma of "*fermentation*," practice and recommend plans for the management of manure in which fermentation is completely arrested. This is the result when yard manure is composted with lime. In nearly all forms of compost into which lime, salt, or ashes are introduced, fermentation is made impossible, and yet every body knows that this is a common practice.

The contrary position, that fermentation has nothing to do with the success of yard manure, is much more susceptible of proof. Not only are the preceding remarks calculated to show this, but numerous other considerations establish the same point. But whatever may be the condition of the manure whilst in heap, writers have, without exception, failed to consider the effect of scattering it over the land, and mixing with the soil. The moment the manure is so di-

posed, it is put in contact with air, over a large surface, and when plowed into a well drained mellow soil, the surface of contact is further extended. The effect of this is to stop fermentation, and induce the very dissimilar change of eremacausis. The tyro in chemistry knows this truth. What then is the origin of the loud controversy about long and short dung; in truth, nothing but ignorance, if the process of fermentation entered into the heads of the combatants as the great object of either. But we are told that certain forms of dung are hot and others cold, and therefore the former are suited to cold soils, &c. This notion has so much weight with many, that I cannot pass it by without notice; but it is indeed not worthy of discussion. The amount of heat given out by two parcels of manure in a given time, depends upon the rapidity of fermentation, and this upon the degree of dryness, or amount of animal matter present in either parcel. If the amount of animal matter in a parcel of cow dung be the same as that in a similar pile of horse dung, they will both yield the same number of degrees of heat; if they are both wetted to the same degree, they will give it out in the same length of time, but if either be wetter, that will take the longest time. Horse manure being drier than cow dung, ferments more rapidly in heap, but spread it on the soil and place it under all circumstances in the same position as cow dung, especially when the animals are similarly fed, and the difference vanishes. In turning them into the soil they are placed in circumstances nearly similar.

If however the practical man still adheres to the position that it is the condition of fermentation which is the source of the excellence of yard manure, there is no difficulty in discovering substitutes much less expensive. I allude to this position, because the idea of the mysterious influence of fermentation has so completely enthralled the minds of many agriculturists, that there is little hope of disentangling the subject by mere argumentation. One of the most eminent men of this school has recently dilated to some extent on the subject of applying *yeast* to the soil, as an universal manure. Masses of leaves enter into a state of fermentation precisely analogous to that of yard manure. Straw kept moist does the same, especially if watered with putrescent ditch water or urine. Green weeds thrown together with peat and kept moist rapidly ferment. Spent tanners' bark undergoes the same change. Litter of any kind kept moist, or made to surround fish, dead animals, or similar substances, rapidly ferments. One part of dung to three of peat, straw, or other waste vegetable matter, kept moist will throw the whole into fermentation. Many other plans might be described, but I trust the farmer will be satisfied at all events, that there is nothing mystical in the act of fermentation; and that it is very questionable, whether it can take place in the soil, or be in any way advantageous to his crop.

In no good experiment has it ever been found that farm yard manure failed to advance the crop, it has defects, but this is not one of them. When, however, the land is already well dunged, or very rich, its effects are much less apparent, indeed the largest crops have in every case been raised by other means. Lime, bones, ashes, plaster, salt, charcoal, nitre, and other manures, have each yielded immense crops on particular occasions, far outrivaling any thing that common manure yields; but they are not certain in their effects. In the same way a marling, claying, burnt clay, drainage, subsoiling, deep plowing are often attended with marvellous effects; but to adopt these practices with any expectation of success, requires mature judgment, and a heavy outlay. Yard manure does not yield very large crops by itself; when assisted by good tillage and other means it has done so, but alone it will not give in any case extraordinary returns. There are good reasons both for its uniform and limited success.

On a grain or hay farm, especially if it be remote from market, the straw or hay goes to the stock, and by them is converted into manure. I have already given a history of the ashes of hay, they contain every mineral component of the next crop of grass; so the ashes of any other kind of provender yield the mineral substances necessary to feed the future crop of the same plants. There is indeed a loss, inasmuch as the animals appropriate a considerable amount, and of the most important portion, to their substance and growth. The minerals are the same, but the proportions are not the same. Now if we regard the efficacy of the manure as depending in part on these minerals, it is evident that the grass or grain will be benefitted to some extent by finding in the soil an increased quantity of every mineral it requires. So far the manure, by enlarging the proportion of mineral matter fitted for the food of plants, secures an increase of crop; but this increase is within narrow limits, because the minerals added in manure are of sparing solubility, and are not in the full proportion required by the plants. The hay has been fed to growing animals, which have appropriated nearly all the bone earth it originally contained, for the making of bone, this is necessarily lost to the manure.

Instead therefore of adding to the meadow one hundred pounds of bone which might be required for a large crop, perhaps twenty pounds only go in the manure, any deficiency must be drawn from the soil, and this being a scarce and very insoluble body, the grass cannot obtain a sufficiency from this source. Now had a special manure containing a large quantity of soluble bone earth been put on this soil, the crop might have been doubled or trebled thereby.

In the case of every other plant, the same truth obtains. Each crop evinces some partiality for mineral substances, or for forms of nitrogen, none of these are in great excess in yard manure, but all are present; hence the crop will be certainly increased, whilst it can scarcely be inordinately great. When lime and other simple amendments which contain only one kind of plant food have brought about extraordinary results, it has arisen either from a want of the substance in the soil, a peculiar partiality of the crop therefor, or some collateral action. Mature deliberation is therefore necessary when a simple manure is employed to secure any result, or to guard against the possibility of doing the soil an injury. No empirical rules can cover this case, but when success is attained it is often immense and permanent.

We cannot overcome this objection to farm yard manure by increasing the dose, whilst there are other reasons against the attempt. Ask under what circumstances smut and rust attack grain crops; it will be discovered that this occurs chiefly on lands heavily dunged. On the sea coast, and where mineral manures are largely employed, smut and similar fungoid diseases are rare. The farmers of Cheshire have for years used little manure besides their native salt, to guard against the rust which had taken possession of their meadows. This is not the only cause of rust, but most certainly one of the chief. Another consequence of inordinate dunging is the laying of grain; the young plants run up so rapidly that they do not become sufficiently strong to bear the ears, and therefore fall, and the crop is lost or much injured. This effect is also seen on lands in timothy grass, and is sufficiently familiar. In the third place, the use of yard manure is additionally expensive to the farmer from the weeds it engenders. Where long dung is employed in quantity, the amount of weeds produced renders it almost impossible to grow plants broadcast, the effect being a less crop than if no manure had been used. This difficulty is in a measure removed by employing short dung; but then all the fancied benefits of the act of fermentation must be given up, as well as the effects of most of the nitrogen and the soluble salts of the dung and litter.—*N. Y. Agricultural Transactions.*

Cultivation of Raspberries.

A few words on the cultivation of this favourite fruit may be useful at this season, when the old beds require care, and new plantations should be made. The raspberry will bear fruit with almost any treatment, and this is the reason its culture is so often neglected. Odd corners of the garden, and shaded situations where nothing else will flourish, are often chosen, and a small crude fruit is the result. Like every other garden production, the raspberry knows how to turn free air and warm suns to excellent account, and every available advantage of this kind should be given them.

In most gardens, we find this plant cultivated in compartments, in rows just wide enough apart to allow of a passage for gathering the fruit; but, too frequently, these alleys become a mass of entangled branches before the summer ends, thus preventing the comfortable taking of the crop, and keeping the young shoots from the sun and air. Now, in whatever way you plant your canes, let there be great distances between the clumps, wide enough in the rows to allow of other crops. If the rule is observed, never to have two rows of raspberries together, but to put them at distances sufficient to allow of the growth of cabbages, turnips, celery, &c., every desirable end will be answered. In this case, the canes need not be far apart individually, and a greater as well as a finer produce will be secured.

In making new plantations, let the ground be trenched half a yard deep, and plenty of rotten manure be incorporated with the soil. this should be done a month or two before the time of planting, to allow of the settling of earth. As a general rule, raspberries planted this season should not be expected to bear fruit the next, as the object is to secure a vigorous growth of canes for another year. If you get your plants from a nursery with but little root to them, and probably very dry before you plant them, it will be necessary to nurse them well, in order to get any new shoots from them; and, if this year's stems are allowed to bear, you will probably have the fruit and nothing more for your pains, and have to fill up vacancies next year. You had better, therefore, cut down the stems to within a foot of the ground at the time of planting, and wait patiently till strong shoots next year repay you for your trouble.

But if you have a supply on your own

ground, or can go yourself and see the plants taken up at a nursery near your garden, you may secure a crop next season, without the risk of injuring your plantation afterwards. The writer has just planted out a quantity of the Fastloff raspberry, with the two objects of having fruit next season, and a permanent stock, and will detail his manipulations for the guidance of any who may have confidence in him to follow his example. In the first place, a hole was dug with a fork, about half a yard across, but not deep, the soil being only loosened by that instrument. With the same invaluable tool the plants were dug up from their old quarters, care being taken to have masses of root fibres adhering to them, and at least one strong bearing stem was inserted in each hole, surrounded by four or five smaller ones. The weak canes were cut nearly to the ground, but the strong were allowed about four feet, and from these the writer has no doubt abundance of fruit will be gathered, and, in most cases, shoots produced as well. The disturbance being small, and great care being taken in arranging and treading down the roots, the season also being early, it is concluded the canes will have no difficulty in progressing as well as they would have done in their former situation. This plan presupposes that you have an abundant stock of your own, or are not careful of expense, since more canes are required than would ordinarily be given to a new plantation.—*Gardiners' Chronicle.*

Pomology in Philadelphia.

Passing a few hours in Philadelphia lately, we made a hasty visit to our correspondent, Dr. W. D. Brinckle, who is already known to horticulturists as one of the most zealous of amateur cultivators.

Dr. Brinckle's *penchant*, as we were aware, is the production of seedling varieties of fruit. Hitherto he has been experimenting largely upon the *Strawberry* and *Raspberry*, but he has now turned his attention to the Pear, Apple, and other fruit trees.

His residence is one of the fine houses in Chesnut street, forming part of the block known as *Girard Square*. Of course, therefore, his gardening operations are mainly confined to the small space comprised in a deep yard of a town house. We confess that when we saw the collection of seedling fruits assembled there, in various stages of growth, hundreds within that narrow space, and all most systematically arranged—many that had already given surprising results, and a multitude of others that promised well—we found abundant proof how easy it is to bring great results out of small means, and how profitless to the country are thousands of gardens, of the largest size. The limited area before us, only a few hundred square feet, contained a promise of dozens of new varieties of fruit that may be of priceless value hereafter to every one leading a rural life.

Dr. Brinckle's plan embraces both *hybridising* and raising accidental varieties from seeds of the finest known sorts. In order not to lose time, and to be able perfectly to control the fertilization of plants under experiment, Dr. B. has been in the habit of having a large number of strawberries, raspberries, etc., in pots. These continue their growth, bloom, are crossed artificially, produce fruit, and the seed is sown in an apartment in the upper part of his house during the whole winter; thus ennabling Dr. B. to carry on his scientific experiments throughout the year. In Raspberries, he has been particularly successful. The *Cushing*, already made known to the public, is a variety of merit; but one which has fruited for the first time this season—a fine strong plant, eight feet high, with many side shoots, and which, we understood from a friend who is a capital judge, was quite a pomonal wonder in its way, bids fair to eclipse all his other seedlings. This is a true *yellow* sort, much larger and finer than the white [misnamed yellow] Antwerp, very productive, and of excellent flavor. Dr. Brinckle showed us a faithful drawing of this new Raspberry, which he proposes to call Col. Wilder, after the distinguished President of the Massachusetts Society. We hope to be able to give a drawing and description of this fruit in an early number of this journal. When the various new specimens of trees and plants have been tested, those worthy of preservation are removed to a farm some miles distant from the city. Altogether we left Dr. Brinckle, and his singularly rich and singularly limited grounds, with the feeling that he is doing as much or more in originating new fruits, in a strictly scientific way, than any other person in the country. —*Downing's Horticulturist.*

Shaker Barn at Hancock, Mass.

The Society of United Brethren, or "Shakers," at Hancock, Mass., have a large circular stone barn, which is justly regarded as a curiosity. In company with Wm. Bacon, Esq., of Richmond, we lately made a call at the Hancock village, and took a short look at this barn. It was built in 1826, is 300 feet in circumference, and 90 feet in diameter on the inside. The walls are of stone, 28 feet in height. The entrance for

loads is on the second story. The bay is in the centre. The teams on entering pass along an avenue between the bay and the wall—the loads are discharged, and the teams go out at the same place they went in. Twenty-five loads or wagons can be taken in at one time. The bay will hold 400 tons of hay. The stalls for cattle and horses are on the first floor, and are arranged in a circle corresponding to the shape of the building. The animals stand with their heads towards the centre of the barn, and are handily fed from the bay. There are stalls for 75 head of cattle. The barn is substantial and convenient, but not quite as convenient, we think, as the Shaker barn at New Lebanon.—*Cultivator.*

Manure for Strawberries.—The best top-dressing for strawberry beds is a little leaf mould pointed in with a fork, early in March. A good addition also is nitrate of soda, three ounces to each square yard, sprinkled over the surface at the same season. Bone dust and charred turf, pointed in with a fork in October, have also been found highly beneficial.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Twelfth Month, 1847.

We have often thought that Dr. Johnson's definition of the business of a schoolmaster, was particularly applicable to that of the agricultural journalist: "To recall vagrant inattention "and "to stimulate sluggish indifference." Every movement of the farmer—every step which he takes, is emphatically, under the broad canopy of Heaven—it is in the midst of the forests, and the fields, and over the luxuriant carpet, which nature has so liberally spread abroad for his enjoyment. He ploughs—he plants—he cultivates under a full persuasion of the fidelity of nature's great "Fructifier." He throws his seed into her bosom, nothing doubting the continued fulfilment of the ancient promise, that seed time and harvest shall not cease while the earth remaineth.

It is an appropriate duty of the Periodicals which the farmer reads and puts into the hands of his children, not only to keep him informed of the improvements that are continually bettering the condition of his "craft," and to suggest to him variations in his crops, as well as new modes of feeding them, and everything else in fact, connected with his "Thrift."—the appliances of his farm and household, but also to raise his views from his horses and his plough, to the magnificence of nature that is around him; and from nature, as the poet says, up to her Creator, and to remind him occasionally of the fact, which his customary round of duties may lead him to forget, that his vocation, if properly followed, is among the noblest and most ennobling, pursued by man. There is a progressiveness—an onward course, in the efforts of the farmer that render them delightful; and why should not this be continually accompanied by corresponding improvement of the mind and enlargement of views, that would place his among the most intelligent and respectable of the professions?

The farmer, it seems to us, cannot behold, but with great complacency, his horses—his cattle—his sheep—his everything that is living around him, obviously improving by his attention, from year to year—he perceives the truth of the old saying, that "land is honest," for he finds his fields always grateful for whatever he bestows upon them; and there is an indescribable feeling of consciousness, that he deserves far more of his country than the man who has led armies to battle, and slain his thousands; because, in the language of old David Lawton, he has helped to multiply the comforts of his species. There is every inducement for our farming population to believe, that the tendency of everything connected with their vocation, is like every thing else, in this great and wonderful Republic, upward and onward. Let us then extend our views—let us "look aloft,"—and who can doubt but every judicious enterprise will be attended with a result correspondent with the aim—as advantageous to the permanent interests of the country, as it will be gratifying and beneficial to ourselves.

Before another number of our paper shall appear, a new year will have begun its round, and new resolutions and new plans may be formed by the indifferent and careless of every vocation. Let him who neglects his heart—his lands, his fences, his cattle, or his buildings, be up and doing, for it is the diligent hand that maketh rich.

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* The first No. of "*The Iowa Farmer's Advocate*," edited by H. Gates, and published by James Tizzard & Co., at Burlington, Iowa, has been lately received at this office. It is printed on 24 quarto pages, at one dollar a year. The number before us contains a great deal of valuable matter, and we should consider it well worthy the support of our western farmers.

The Address of Dr. Darlington at Oxford, in Chester county, in the Ninth month last, we think, will be read with no ordinary interest. The subjects glanced at, will well bear to be gravely reflected upon; and perhaps more particularly in neighbourhoods where the land is so well improved, and the crops are so luxuriant, as they are in the vicinity of Hopewell Cotton Works.

In the last number of the *Cultivator* we find a communication signed J. J. T., which contests the claim of "Newbould"—Charles Newbold, we apprehend, of Burlington county, N. J., is meant,—to certain important improvements in the cast-iron Plough, made some forty or fifty years ago, and awards them to Jethro Wood, of New York. See New York Agricultural Transactions for 1846; and Farmers' Cabinet, p. 18, current volume.

KEPHART'S PATENT

Fruit and Vegetable Preserver.

An admirable invention, by which fruits, vegetables, &c., viz. oranges, lemons, apples, pears, peaches, &c.—potatoes, green corn, melons, &c., can be kept as long as desirable with all their natural juices and sweetness. Also, butter, eggs and bacon can be kept throughout the year, fresh and sweet, at an expense not greater than in an ordinary warehouse in the city. A full description will be found in the June number of the Cabinet.

The undersigned having purchased the Patent-right for the United States, except the states of New Jersey, Delaware and Maryland, and the cities of New York and St. Louis, offer for sale Patent-rights for the construction of the PRESERVER, by states, counties or individual rights, upon terms that will induce all interested in the preservation of the above named articles, to purchase rights and construct houses.

FLACK, THOMPSON & BROTHER,
Coates Street wharf, near Fairmount.

All communications will receive prompt attention, if addressed either to PETER KEPHART,
Western Hotel, Baltimore, Md.
Or to FLACK, THOMPSON & BROTHER,
Spring Garden P. O. Philadelphia.

July 15th, 1847.—6t.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1847. tf.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

April 15th, 1847.

COAL.

THE subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish *at the usual cash prices*, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Seventh month 15th, 1847.

NEW

Horticultural and Agricultural Ware-house,

84 Chesnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1846. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1847.—1y. R. BUIST.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES,
Successor to George M. Coates.

May 15th, 1847.

PREMIUM IMPLIMENTS.

PROUTY'S Improved Machine for Shelling and Screening Corn, and Separating it from the Cob.

For this Machine the Philad'a Agricultural Society awarded their first Premium for Corn Sheller, 1847.

Grant's Patent Premium Fan Mill,

For Chaffing and Screening Wheat, at one operation. Three Silver Medals, and nine First Premiums, have been awarded for the above Mill.

Prouty and Mears' Patent Centre-Draught, Self-Sharpening Ploughs. First Premium awarded for these Ploughs, by the Philadelphia Agricultural Society, 1844, 1845, 1846 and 1847.

Corn and Cob Breakers and Grinders,

Corn Stalk Cutters & Grinders—Sugar Mills—Spain's Improved Barrel Churn, the dashers of which may be taken out to clean. Also, a full assortment of Agricultural Impliments, Manufactured and for Sale by

D. O. PROUTY,

No. 194½ Market Street, below Sixth, Phildelphia.

Nov. 15, 1847.—tf.

☞ SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

THE quantity of rain which fell in the 11th month 1847, was ..... 2,83 in.

Penn. Hospital, 12th mo. 1st.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$3 50
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BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 11 vols.	9 50
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Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion.	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
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THOMAS' FRUIT CULTURIST,	50
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AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
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☞ We are prepared to bind books to order.

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First quality African Guano, from the island of Ichaboe, warranted genuine. Also a few tons Peruvian

For sale by J. B. A. & S. ALLEN,
No. 7 South Wharves, 2nd Oil Store below Market street.

Philadelphia, March 17th, 1847.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels each, or 35 cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now ready to supply any demand for wheat.

JOSIAH TATUM.

Philada. 8th mo. 16th, 1847.

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Joseph Rakestraw, Printer.